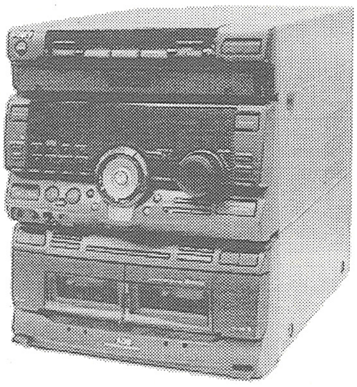
HCD-GR8/RX90

SERVICE MANUAL

AEP Model
UK Model
HCD-RX90
E Model
Australian Model
Tourist Model
HCD-GR8



HCD-GR8/RX90 is the tuner, deck, CD and amplifier section in MHC-GR8/RX90.

Photo: HCD-RX90

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing corporation.
"DOLBY" and the double-D symbol ▯▯ are trademarks of Dolby Laboratories Licensing Corporation.

CD Section	Model Name Using Similar Mechanism	HCD-GR7/RX70
	CD Mechanism Type	CDM38L-5BD29AL
	Base Unit Name	BU-5BD29AL
	Optical Pick-up Name	KSS-213D/Q-NP
Tape deck Section	Model Name Using Similar Mechanism	HCD-H881
	Tape Transport Mechanism Type	TCM-220WR2

SPECIFICATIONS

Amplifier section

DIN power output (RX90)	80+80 watts (8 ohms, at 1kHz, DIN)
Continuous RMS power output	
RX90:	100+100 watts (8ohms at 1kHz, 10% THD)
GR8:	90+90 watts (8ohms at 1kHz, 10% THD)
Peak music power output	
GR8:	1500 watts
Music power output	
RX90:	160+160 watts (8ohms at 1kHz, 10% THD)
Inputs	VIDEO/MD IN (phono jacks): voltage 250 mV, impedance 47 kilohms MIX MIC (phone jack): sensitivity 1 mV, impedance 10 kilohms
Outputs	VIDEO/MD OUT (phone jacks): voltage 250 mV impedance 1 kilohms PHONES (stereo phone jack): accepts headphones of 8 ohms or more. SPEAKER: accepts impedance of 8 to 16 ohms SURROUND SPEAKER: accepts impedance of 16 ohms. SUPER WOOFER: Voltage 1 V, impedance 1 kilo ohm

CD player section

System	Compact disc and digital audio system
Laser	Semiconductor laser (λ=780 nm) Emission duration: continuous
Laser output	Max. 44.6 μW* *This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.
Frequency response	2 Hz – 20 kHz (±0.5 dB)
Wavelength	780 – 790 nm
Signal-to-noise ratio	More than 90 dB
Dynamic range	More than 90 dB
CD OPTICAL DIGITAL OUT (Square optical connector jack, rear panel)	
Wavelength	600 nm
Output Level	–18 dBm

Tape player section

Recording system	4-track 2-channel stereo
Frequency response (DOLBY NR OFF)	60 – 13,000 Hz (±3 dB), using Sony TYPE I casstte 60 – 14,000 Hz (±3 dB), using Sony TYPE II cassette
Wow and flutter	±0.15% W.Peak (IEC) 0.1% W.RMS (NAB) ±0.2% W.Peak (DIN)

– Continued on next page –

MINI Hi-Fi COMPONENT SYSTEM

MICROFILM

SONY®

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range	
EE and CIS models:	65.0 – 74.0 MHz 87.5 – 108.0 MHz
Other models:	87.5 – 108.0 MHz
Aerial	FM lead aerial
Aerial terminals	75 ohm unbalanced
Intermediate frequency	10.7 MHz

UKV tuner section (EE and CIS models)

Tuning range	65.0 – 74.0 MHz Polar stereo

AM tuner section

Tuning range	
RX90:	MW: 531 – 1,602 kHz (with interval set at 9kHz) LW: 153 – 279 kHz (with interval set at 3kHz)
MX, AUS, EA4 and TH models:	531 – 1,602 kHz (with the AM tuning interval st at 9 kHz) 530 – 1,710 kHz (with the AM tuning interval set at 10 kHz)
Other models	MW: 531 – 1,602 kHz (With the MW tuning interval set at 9 kHz) 530 – 1,710 kHz (With the MW tuning interval set 10 kHz) SW: 5.95 – 17.9 MHz (with the SW tuning interval set at 5 kHz)
Aerial	AM loop aerial
Aerial terminals	External aerial terminal
Intermediate frequency	450 kHz

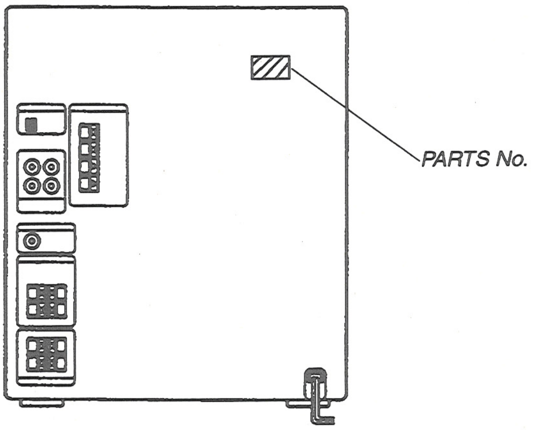
General

Power requirements	
RX90:	220 – 230 V AC, 50/60 Hz
MX model:	120 V AC, 50/60 Hz
MY and AUS models:	220 – 240 V AC, 50/60 Hz
TH model:	220 V AC, 50 Hz
Other models:	110 – 120 V or 220 – 240 V AC, 50/60 Hz Adjustable with voltage selector
Power consumption	
RX90:	230 watts
GR8:	220 watts
Mass:	Approx. 9.5 kg
Supplied accessories:	AM loop aerial (1) Remote RM-SD80 (1) Sony SUM-3 (NS) Batteries (2) FM lead aerial (1) Speaker cords (4)

Design and specifications are subject to change without notice.

MODEL IDENTIFICATION

– BACK PANEL –



MODEL	PARTS NO.
GR8 : EA3 model	4-986-845-1☐
GR8 : MY model	4-986-845-2☐
GR8 : E3, IA models	4-988-021-0☐
GR8 : E2 model	4-988-021-1☐
GR8 : SP model	4-988-021-2☐
GR8 : TW, JE models	4-988-021-3☐
GR8 : HK model	4-988-021-4☐
GR8 : AUS model	4-988-021-5☐
GR8 : MX model	4-988-021-6☐
GR8 : EA4, TH, SAF models	4-988-021-7☐
RX90 : AEP model (Made in Malaysia)	4-986-845-0☐
RX90 : AEP (Made in Indonesia), AED, G, UK models	4-986-982-0☐
RX90 : EE, CIS model	4-986-982-1☐

- Abbreviation

AED : Northern European
AUS : Australian
E2 : 120 V AC Area in E model
E3 : 240 V AC Area in E model
EA3 : Saudi Arabia
EA4 : Israeli
EE : East European
G : German
HK : Hong Kong
IA : Indonesia
JE : Tourist
MX : Mexican
MY : Malaysia
SAF : South African
SP : Singapore
TH : Thailand
TW : Taiwan

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

The following caution label is located inside the unit.

CAUTION ; INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ADVARSEL ; USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDS ÆTTELSE FOR STRÅLING.
VARO! ; AVATTAESSA JA SUOJALUKITUS OHITETTAESSA DLET ALTTIINA LASERSÄTEILYLLE.
VARNING ; LASERSTRÅLING NÄR DENNA DEL ÄR OPPNÅD OCH SPÄRREN ÄR URXOPPLAD.
ADVARSEL ; USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

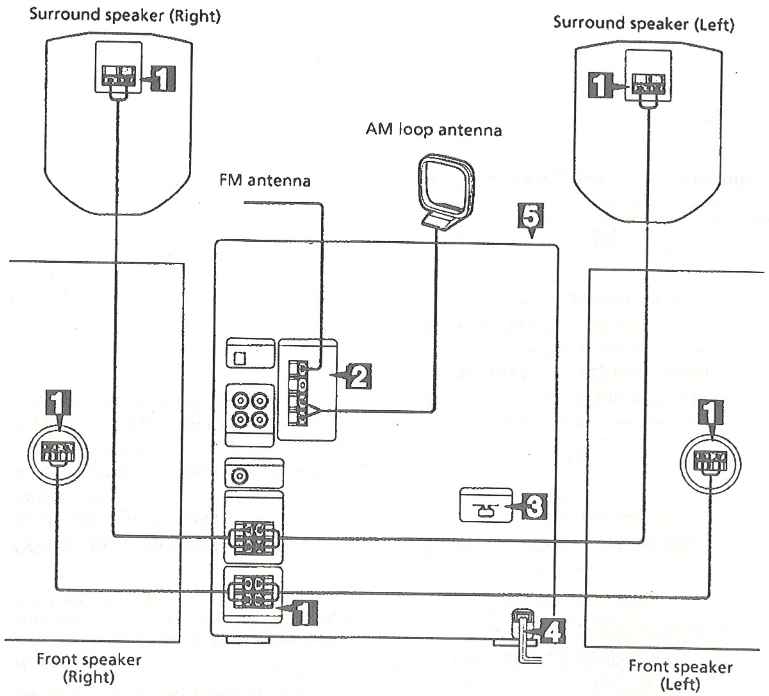
- Keep the temperature of the soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

SECTION 1
GENERAL

This section is extracted from instruction manual.

Step 1: Hooking up the system

Do the following procedure 1 to 5 to hook up your system using the supplied cords and accessories.

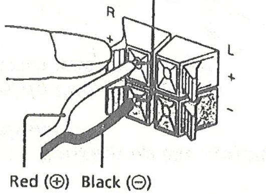

Surround speaker (Right)
Surround speaker (Left)
AM loop antenna
FM antenna
1
2
3
4
5
Front speaker (Right)
Front speaker (Left)

1 Connect the speakers.

1 Connect the speaker cords of front speakers to the SPEAKER jacks of the same color .

Keep the speaker cords away from the antennas to prevent noise.

Insert only the stripped portion.


R
L
+
-
Red (⊕) Black (⊖)

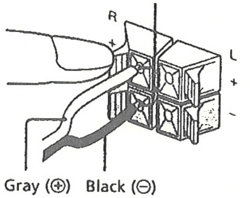
2 Connect the speaker cords of surround speakers to the SURROUND SPEAKER jacks of the same color .

Keep the speaker cords away from the antennas to prevent noise.

Note

Do not place the surround speakers on top of a TV. This may cause distortion of the colors in the TV screen.

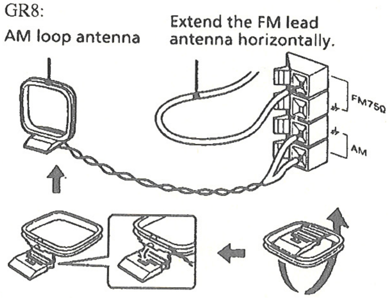
Insert only the stripped portion.


R
L
+
-
Gray (⊕) Black (⊖)

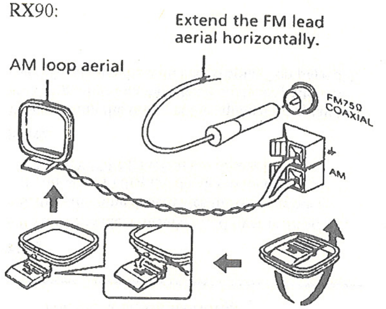
2 Connect the FM/AM antennas.

Set up the AM loop antenna, then connect it.

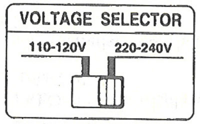
GR8:


AM loop antenna
Extend the FM lead antenna horizontally.
FM75Ω
AM

RX90:


AM loop aerial
Extend the FM lead aerial horizontally.
FM75Ω COAXIAL
AM

3 Set VOLTAGE SELECTOR to position of your local power line voltage (Saudi Arabia, E, Hong Kong, Indonesia, Tourist, Singapore, Taiwan models).


VOLTAGE SELECTOR
110-120V
220-240V

4 Connect the power cord to a wall outlet.

Demo mode appears in the display.

If the plug on this unit does not fit your wall outlet, detach the supplied adapter from the plug (except for Latin American countries, Australia and Malaysia).

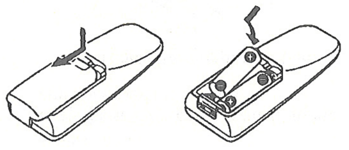
5 Deactivate the demo mode by pressing DISPLAY/DEMO when the system power is turned off.

The demo mode is also deactivated when you set the time.

continued

Step 1: Hooking up the system (continued)

Inserting two size AA (R6) batteries into the remote



Tip

With normal use, the batteries should last for about six months. When the remote no longer operates the system, replace both batteries with new ones.

Note

If you do not use the remote for a long period of time, remove the batteries to avoid possible damage from battery leakage.

When carrying this system

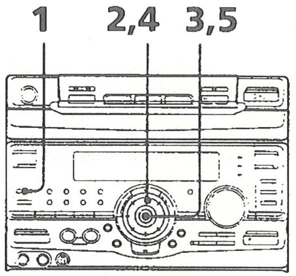
Do the following to protect the CD mechanism.

1 Press FUNCTION repeatedly until "CD" appears in the display.

2 Hold down PLAY MODE and press POWER to turn off the power.

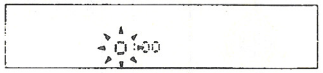
Step 2: Setting the time

You must set the time before using the timer functions.



1 Press CLOCK/TIMER SET.

The hour indication flashes.

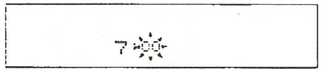


2 Turn the jog dial to set the hour.

The clock is on a 12-hour system.

3 Press ENTER/NEXT.

The minute indication flashes.



4 Turn the jog dial to set the minute.

5 Press ENTER/NEXT.

The clock starts working.

Tips

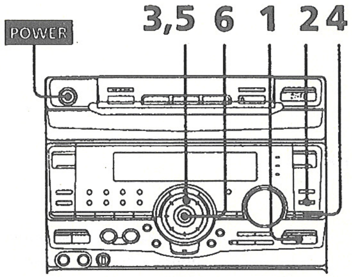
- If you've made a mistake, start over from step 1.
- Setting the time deactivates the demo mode.
  If you want to display the demo mode, press DISPLAY/DEMO when the power is off.

Note

When setting the time, set the equalizer display to anything other than Spectrum analyzer pattern 3 (see "To change the equalizer display" on page 31).

Step 3: Presetting radio stations

You can preset up to 40 stations, 20 for FM, 10 for MW and 10 for SW. For South American, Australian and Thai models, you can preset up to 30 stations, 20 for FM and 10 for AM.



1 Press TUNER/BAND repeatedly until the band you want appears in the display.

Every time you press this button, the band changes as follows:

AEP, Northran European, German, UK models:
FM → MW → LW

East European, CIS models:
FM → MW → LW → UKV*

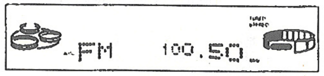
* "STEREO PLUS" is displayed when you select UKV.

Mexican, Australian and Thailand models:
FM ←→ AM
Other models:
FM → MW → SW

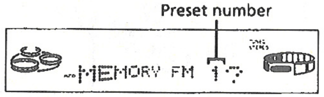
2 Press TUNING MODE repeatedly to select "AUTO".

continued

3 Turn the jog dial.
The frequency indication changes and scanning stops when the system tunes in a station. "TUNED" and "STEREO" (for a stereo program) appear.



4 Press TUNER MEMORY.
A preset number appears in the display.



5 Turn the jog dial to select the preset number you want.

6 Press ENTER/NEXT.
The station is stored.

7 Repeat steps 1 to 6 to store other stations.

To tune in a station with a weak signal

Press TUNING MODE repeatedly to select "MANUAL" in step 2, then turn the jog dial to tune in : Pressettingthe station.

To change the preset number

Start over from step 1.

To change the AM tuning interval (Except for the Middle Eastern model)

The AM tuning interval is factory-preset to 9 kHz (10 kHz in some areas). To change the AM tuning interval, tune in any AM station first, then turn off the power. While holding down the ENTER/NEXT button, turn the power back on. When you change the interval, AM preset stations will be erased. To reset the interval, repeat the same procedure.

Tip

The preset stations are retained for half a day even if you unplug the power cord or if a power failure occurs.

Connecting optional AV components

To enhance your system, you can connect optional components. Refer to the instructions of each component.

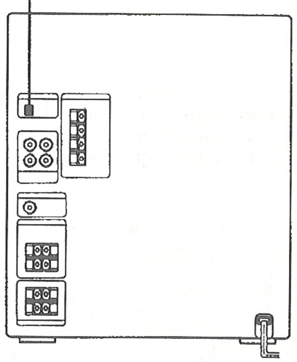
Connecting audio components

Select one of the following two connections, depending on the equipment to be connected and method of connecting.

Connecting an MD deck for digital recording

You can record from CD into the MD deck digitally by connecting an optical cable.

To the DIGITAL IN jack of the MD deck

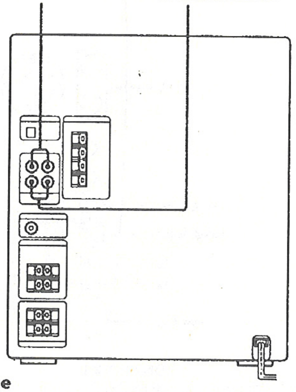


Connecting an MD deck for analog recording

Make sure to match the color of the plugs and the connectors. To listen to the sound of the connected MD deck, press FUNCTION repeatedly until "MD" appears.

To the audio output of the MD deck

To the audio input of the MD deck



Note

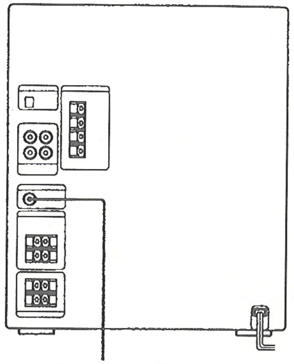
If you cannot select "MD" even when you have pressed FUNCTION, press POWER while pressing FUNCTION when the power is turned off. "VIDEO" will be switched to "MD". To return to "VIDEO", do the same procedure.

Tip

If you connect a turntable with MM cartridge, connect it to VIDEO/MD IN using the optional MM cartridge equalizer EQ-2 and an audio connecting cord. To listen to the sound, press FUNCTION repeatedly until "VIDEO" appears.

Connecting a super woofer speaker

You can connect an optional super woofer speaker.

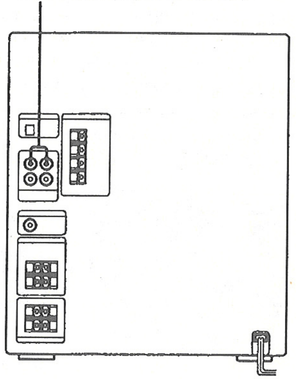


To super woofer

Connecting a VCR

Make sure to match the color of the plugs and the connectors. To listen to the sound of the connected VCR, press FUNCTION repeatedly until "VIDEO" appears.

To the audio output of the VCR



Note

If the sound is distorted when selecting "VIDEO", switch to "MD" (see previous "Note").

continued

Connecting optional AV components (continued)

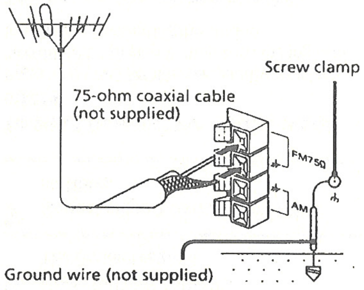
Connecting outdoor antennas

Connect the outdoor antenna to improve the reception.

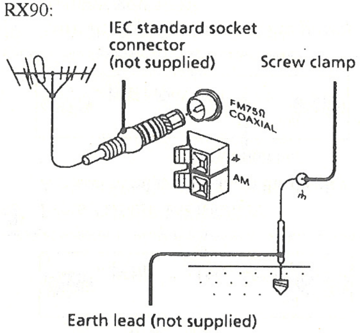
FM antenna

Connect the optional FM outdoor antenna. You can also use the TV antenna instead.

GR8:

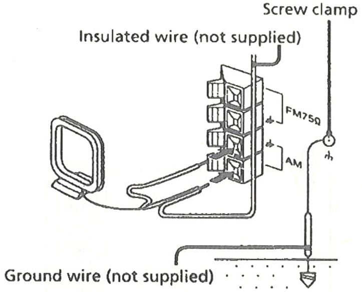

Screw clamp
75-ohm coaxial cable (not supplied)
FM75Ω
AM
Ground wire (not supplied)

RX90:


IEC standard socket connector (not supplied)
Screw clamp
FM75Ω COAXIAL
AM
Earth lead (not supplied)

AM antenna

Connect a 6- to 15- meter (20- to 50- feet) insulated wire to the AM antenna terminal. Leave the supplied AM loop antenna connected.


Screw clamp
Insulated wire (not supplied)
FM75Ω
AM
Ground wire (not supplied)

Important

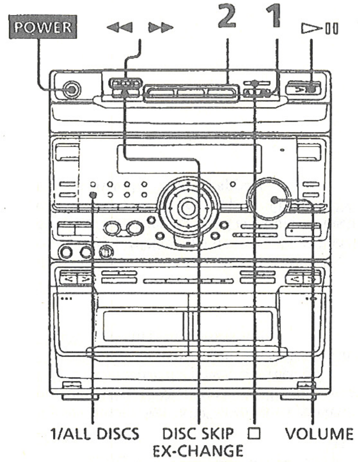
If you connect an outdoor antenna, ground from ⏚ terminal with the screw clamp. To prevent a gas explosion, do not connect the ground wire to a gas pipe.

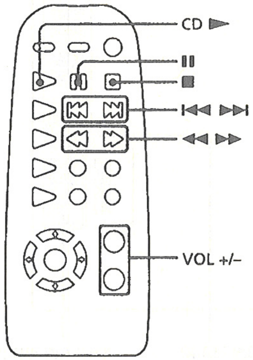
Basic Operations

Playing a CD

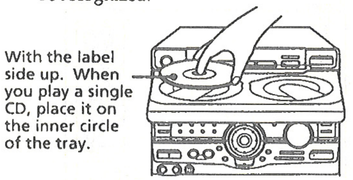
— *Normal play*

You can play up to three CDs in a row.


POWER
◀◀ ▶▶
2
1
▷II
1/ALL DISCS
DISC SKIP ☐ EX-CHANGE
VOLUME

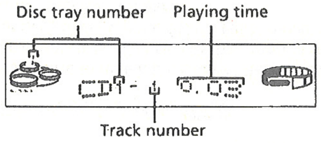


1 Press ≙ OPEN/CLOSE and place up to two CDs on the disc tray.
If a disc is not placed properly it will not be recognized.


With the label side up. When you play a single CD, place it on the inner circle of the tray.

To insert a third disc, press DISC SKIP EX-CHANGE to rotate the disc tray.

2 Press one of the DISC 1~3 buttons.
The disc tray closes and play starts.
If you press ▷II (or ▷ on the remote) when the disc tray is closed, play starts from the CD loaded on the tray whose button is lit green.


Disc tray number
Playing time
CD1 - 1
0.03
Track number

continued

Playing a CD (continued)

To	Do this
Stop play	Press □ (■ on the remote).
Pause	Press ▷II (II on the remote). Press again to resume play.
Select a track	During play or pause, turn the jog dial clockwise (to go forward) or counterclockwise (to go back) and release it when you reach the desired track. Or press ▶▶I (to go forward) or I◀◀ (to go back) on the remote.
Find a point in a track	Press and hold down ▶▶ or ◀◀ (or ▶▶/◀◀ on the remote) during play and release it at the desired point.
Select a CD in stop mode	Press a DISC 1~3 button or DISC SKIP EX-CHANGE.
Play only the CD you have selected	Press 1/ALL DISCS repeatedly until "1 DISC" appears.
Play all CDs	Press 1/ALL DISCS repeatedly until "ALL DISCS" appears.
Remove the CD	Press ⏏ OPEN/CLOSE.
Exchange other CDs while playing	Press DISC SKIP EX-CHANGE.
Adjust the volume	Turn VOLUME (or press VOL +/– on the remote).

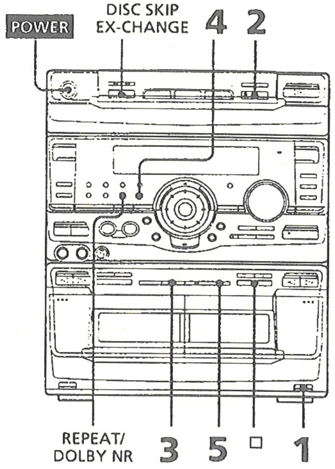
Tips

- Pressing ▷II when the power is off automatically turns the power on and starts CD playback if there is a CD in the tray (One Touch Play).
- You can switch from another source to the CD player and start playing a CD just by pressing ▷II or the DISC 1~3 buttons (Automatic Source Selection).
- If there is no CD in the player, "CD NO DISC" appears in the display.
- When a disc tray is selected or the CD placed on that tray is playing, the DISC 1~3 button for the respective tray lights green.

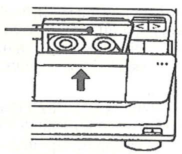
Recording a CD

— CD Synchro Recording

The CD SYNCHRO button lets you record from a CD to a tape easily. You can use TYPE I (normal) or TYPE II (CrO2) tapes. The recording level is adjusted automatically.



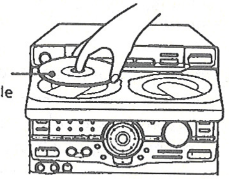
1 Press ⏏ EJECT and insert a blank tape into deck B.


With the side you want to record facing forward

2 Press ⏏ OPEN/CLOSE and place a CD.

Then press again to close the disc tray.

If the indicator for the tray you want to record is not lit green, press DISC SKIP EX-CHANGE repeatedly so that it lights green.


With the label side up. When you play a single CD, place it on the inner circle of the tray.

3 Press CD SYNCHRO.

Deck B stands by for recording and the CD player stands by for playback. ▷ (for front side) lights up.

4 Press EDIT/DIRECTION repeatedly to select ⇄ to record on one side. Select ⊂⊃ (or RELAY) to record on both sides.

5 Press II on deck B.

Recording starts.

To stop recording

Press □ on deck B or on the CD player.

Tips

- If you want to record from the reverse side, press ◁ so that ◁ (for reverse side) lights up.
- When you record on both sides, be sure to start from the front side. If you start from the reverse side, recording stops at the end of the reverse side.
- When you want to reduce the hiss noise in low-level high-frequency signals, press REPEAT/DOLBY NR so that "DOLBY NR B" appears after pressing CD SYNCHRO.

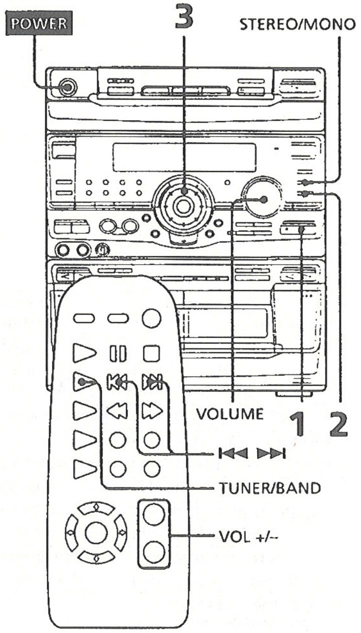
Note

You cannot listen to other sources while recording.

Listening to the radio

— *Preset Tuning*

Preset radio stations in the tuner's memory first (see "Step 3: Presetting radio stations").



1 Press TUNER/BAND repeatedly until the band you want appears in the display.

The bands you can receive vary depending on the the model you purchased. Be sure to check which bands you can receive.

Every time you press the button, the band changes as follows:

3 band model:

FM → MW → LW

4 band model:

FM → MW → LW → UKV*

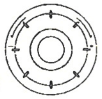
* "STEREO PLUS" is displayed when you select UKV.

2 Press TUNING MODE repeatedly so that "PRESET" appears in the display.

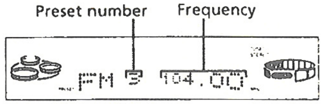
MANUAL → AUTO → PRESET

3 Turn the jog dial (or press ⏮ or ⏭ on the remote) to tune in the desired preset station.

Turn counter-clockwise (or press ⏮ on the remote) for lower preset numbers.



Turn clockwise (or press ⏭ on the remote) for higher preset numbers



To	Do this
Turn off the radio	Press POWER.
Adjust the volume	Turn VOLUME (or press VOL +/– on the remote).

To listen to non-preset radio stations

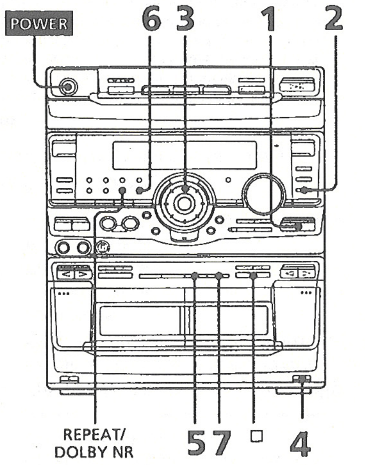
Press TUNING MODE repeatedly so that "MANUAL" appears in step 2, then tune in the station by turning the jog dial.

Tips

- Pressing TUNER/BAND when the power is off automatically turns the power on and tunes to the last received station (One Touch Play).
- You can switch from another source to the radio just by pressing TUNER/BAND (Automatic Source Selection).
- When an FM programme is noisy, press STEREO/MONO so that "MONO" appears in the display. There will be no stereo effect, but the reception will improve. Press the button again to restore the stereo effect.
- To improve broadcast reception, reorient the supplied aerials.

Recording from the radio

You can record the radio programme on a tape by calling up a preset station. You can use TYPE I (normal) or TYPE II (CrO_2) tapes. The recording level is automatically adjusted.

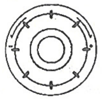


1 Press TUNER/BAND to select the band you want.

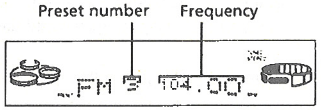
2 Press TUNING MODE so that "PRESET" appears in the display.

3 Turn the jog dial to tune in a preset station.

Turn counter-clockwise for lower preset numbers.



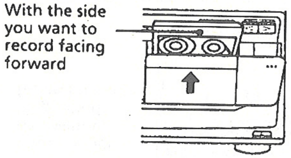
Turn clockwise for higher preset numbers.



continued

Recording from the Radio (continued)

4 Press ⏏ EJECT and insert a blank tape into deck B.



5 Press ●.
Deck B stands by for recording.

6 Press EDIT/DIRECTION repeatedly to select ⇄ to record on one side. Select ⟲ (or RELAY) to record on both sides.

7 Press II on deck B.
Recording starts.

To stop recording

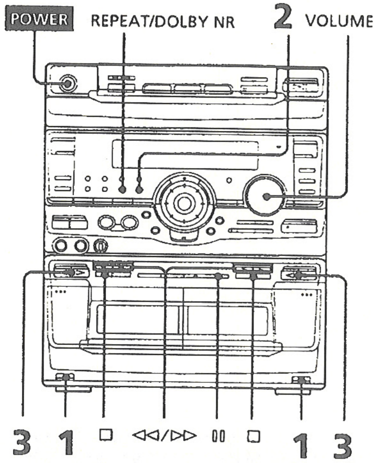
Press □ on deck B.

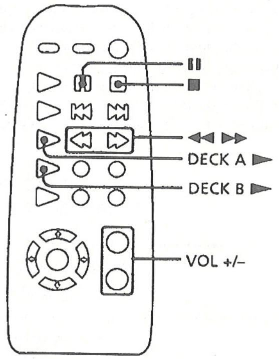
Tips

- If you want to record from the reverse side, press ◁ so that ◁ (for reverse side) lights up.
- When you record on both sides, be sure to start from the front side. If you start from the reverse side, recording stops at the end of the reverse side.
- To record non-preset stations, select "MANUAL" in step 2, then turn the jog dial to tune in the desired station.
- When you want to reduce the hiss noise in low-level high-frequency signals, press REPEAT/DOLBY NR so that "DOLBY NR B" appears after pressing ●.
- If noise is heard while recording from the radio, move the respective aerial to reduce the noise.

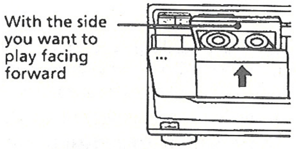
Playing a tape

You can use any type of tape, TYPE I (normal), TYPE II (CrO2) or TYPE IV (metal), since the deck automatically detects the tape type. To select either deck A or B, press DECK A or DECK B on the remote.





1 Press ⏏ EJECT and insert a recorded tape in deck A or B.



2 Press EDIT/DIRECTION repeatedly to select ⇄ to play one side. Select ⟲* to play both sides.
To play both decks in succession, select RELAY (relay play).**

3 Press ▷.
Press ◁ to play the reverse side. The tape starts playing.

* The deck stops automatically after repeating the sequence five times.
** Relay play always follows the following sequence:
Deck A (front side), Deck A (reverse side), Deck B (front side), Deck B (reverse side).

To	Do this
Stop play	Press □ (or ■ on the remote).
Pause (Deck B only)	Press II. Press again to resume play.
Fast-forward	Press ▷▷ while playing the front side or ◁◁ while playing the reverse side.
Rewind	Press ◁◁ while playing the front side or ▷▷ while playing the reverse side.
Remove the cassette	Press ⏏ EJECT.
Adjust the volume	Turn VOLUME (or press VOL +/– on the remote).

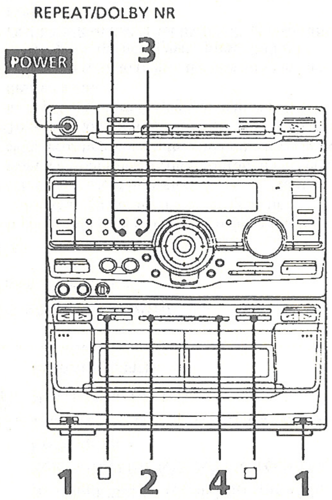
Tips

- Pressing ▷ or ◁ when the power is off automatically turns the power on and starts tape playback if there is a tape in the deck (One Touch Play).
- You can switch from another source to the tape deck just by pressing ▷ or ◁ (Automatic Source Selection).
- When you want to reduce the hiss noise in low-level high-frequency signals, press REPEAT/DOLBY NR so that "DOLBY NR B" appears.
- When dubbing tapes originally recorded with Dolby NR B, the dubbed tape is automatically played with Dolby NR B.

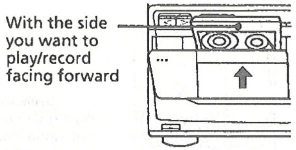
Recording from a tape

— *High-speed Dubbing*

You can use TYPE I (normal) or TYPE II (CrO2) tapes. The recording level is automatically adjusted.



1 Press ≙ EJECT and insert a recorded tape in deck A and a blank tape in deck B.



2 Press HIGH SPEED DUBBING.
Deck B stands by for recording.

3 Press EDIT/DIRECTION repeatedly to select ⇄ to record on one side. Select ⊂⊃ (or RELAY) to record on both sides.

4 Press ⏸.
Dubbing starts.

To stop dubbing

Press □ on deck A or B.

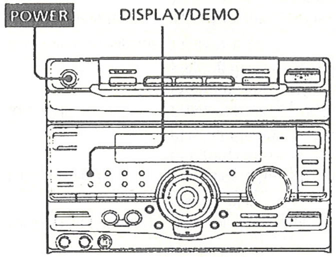
Tips

- When you dub on both sides, start recording from the front side. If you record from the reverse side, recording stops at the end of the reverse side.
- If you set EDIT/DIRECTION to ⊂⊃ when the tapes you use have different lengths, the tape in each deck reverses independently. If you select RELAY, the tapes in both decks reverse together.
- You don't have to set REPEAT/DOLBY NR, since the tape in deck B is automatically recorded in the same state as the tape in deck A.

The CD Player

Using the CD display

You can check the remaining time of the current track or that of the CD.



➡ Press DISPLAY/DEMO during playback.
Each time you press the button during normal playback, the display changes as follows:

Playing time on the current track
↓
Remaining time on the current track
↓
Remaining time on current CD (1 DISC mode) or
"PLAY" display (ALL DISCS mode)
↓
Clock display (for eight seconds)
↓
Effect (P FILE) name or "EFFECT ON (OFF)"

To check the total playing time and the number of tracks on a CD

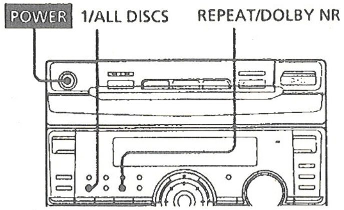
Press DISPLAY/DEMO in the stop mode.

If you press DISPLAY/DEMO again, the clock display appears for eight seconds then the display returns to the previous indication.

Playing the CD tracks repeatedly

— *Repeat Play*

This function lets you repeat a single CD or all CDs in normal play, Shuffle Play and Programme Play.



➡ Press REPEAT/DOLBY NR during playback until "REPEAT" appears in the display.
Repeat Play starts. Do the following procedure to change the repeat mode.

To repeat	Press
All the tracks on the current CD	1/ALL DISCS repeatedly until "1 DISC" appears in the display.
All the tracks on all CDs	1/ALL DISCS repeatedly until "ALL DISCS" appears in the display.
Only one track*	REPEAT/DOLBY NR repeatedly until "REPEAT 1" appears in the display while playing the track you want to repeat.

* You can't repeat a single track during Shuffle Play and Programme Play.

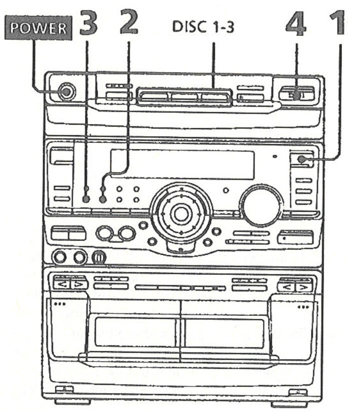
To cancel Repeat Play

Press REPEAT/DOLBY NR so that "REPEAT" or "REPEAT 1" disappears from the display.

Playing the CD tracks in random order

— Shuffle Play

You can play all the tracks on one CD or all CDs in random order.



1 Press FUNCTION repeatedly until "CD" appears in the display, then place a CD.

2 Press PLAY MODE repeatedly until "SHUFFLE" appears in the display.

3 Press 1/ALL DISCS to choose "1 DISC" or "ALL DISCS".
"ALL DISCS" shuffles all the CDs in the player. "1 DISC" shuffles the CD whose DISC indicator is green.

4 Press ▷II.
"⇆" appears and then all the tracks play in random order.

To cancel Shuffle Play

Press PLAY MODE repeatedly until "SHUFFLE" or "PROGRAM" disappears from the display. The tracks continue playing in their original order.

To select a desired CD

Press DISC 1~3 .

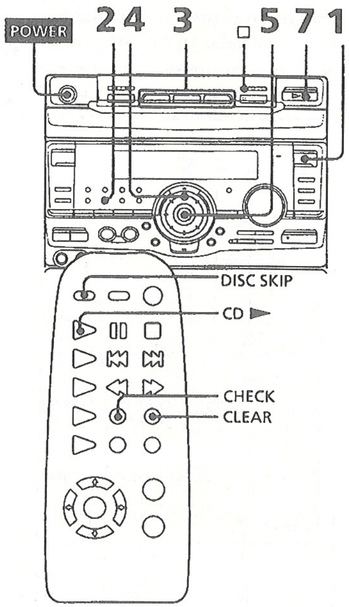
Tips

- You can start Shuffle Play during normal play by pressing PLAY MODE repeatedly to select "SHUFFLE".
- To skip a track, turn the jog dial clockwise (or press ▶▶I on the remote).

Programming the CD tracks

— Programme Play

You can make a programme of up to 32 tracks from all the CDs in the order you want them to be played.

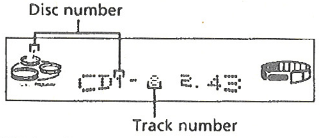


1 Press FUNCTION repeatedly until "CD" appears in the display, then place a CD.

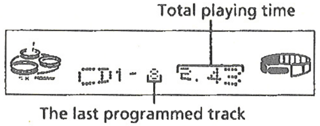
2 Press PLAY MODE repeatedly until "PROGRAM" appears in the display.

3 Press one of the DISC 1~3 buttons to select a CD.

4 Turn the jog dial until the desired track appears in the display.



5 Press ENTER/NEXT.
The track is programmed. The programme step number appears, followed by the total playing time.



6 To programme additional tracks, repeat steps 3 to 5.
Skip step 3 to select tracks from the same disc.

7 Press ▷II.
All the tracks play in the order you selected.

To cancel Programme Play

Press PLAY MODE repeatedly until "PROGRAM" or "SHUFFLE" disappears from the display.

continued

Programming the CD tracks (continued)

To	Press
Check the programme	CHECK on the remote repeatedly. After the last track, "CHECK END" appears.
Clear a track from the end	CLEAR on the remote in stop mode.
Clear a specific track	CHECK on the remote repeatedly until the number of the track to be erased lights up, then press CLEAR.
Add a track to the programme	1 Select the disc tray with a DISC 1~3 button. 2 Select the track by turning the jog dial. 3 Press ENTER/NEXT.
Clear the entire programme	□ once in stop mode or twice while playing.

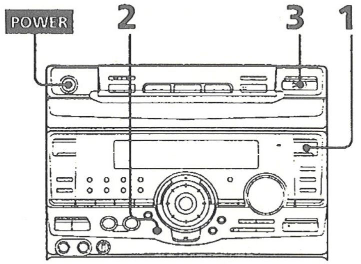
Tips

- The programme you made remains in the CD player even after it has been played back. Press ▷❚❚ to play the same programme again.
- If "--.--" appears instead of the total playing time during programming, this means:
  - you have programmed a track number which exceeds 20
  - the total playing time has exceeded 100 minutes.

Playing CDs without interruption

— Non-Stop Play/Applause Mix

You can play CDs without pausing between tracks or you can mix the sound of applause between tracks.



1 Press FUNCTION repeatedly until "CD" appears in the display, then place a CD.

2 Press NON-STOP repeatedly to select the mode you desire.

To	Select
Play without pausing between tracks	NON-STOP PLAY
Mix applause between tracks	APPLAUSE MIX

3 Press ▷❚❚.

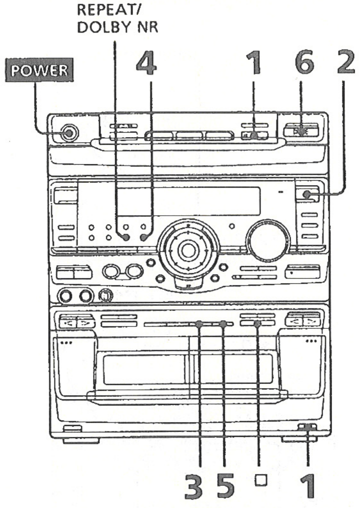
To cancel Non-Stop Play

Press NON-STOP so that "NON-STOP OFF" appears in the display.

The Tape Deck

Recording on a tape manually

You can record from CD, tape, or radio as you like. For example, you can record just the songs you want or record from the middle of the tape. The recording level is adjusted automatically.



1 Insert a blank tape into deck B.

2 Press FUNCTION repeatedly until the source you want to record (e.g., CD) appears.

3 Press ●.
Deck B stands by for recording. ▷ (for front side) lights up.

4 Press EDIT/DIRECTION repeatedly to select ⇄ to record on one side. Select ⊂⊃ (or RELAY) to record on both sides.

5 Press ❚❚ on deck B.
Recording starts.

6 Start playing the source to be recorded.

To	Press
Stop recording	□ on the deck B
Pause recording	❚❚ on the deck B

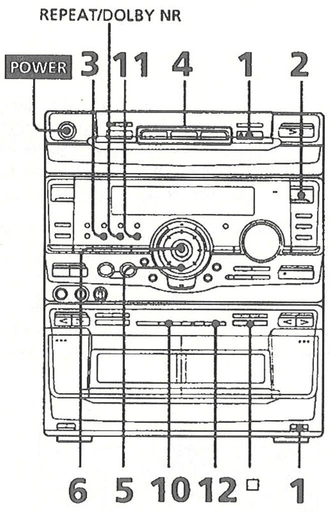
Tips

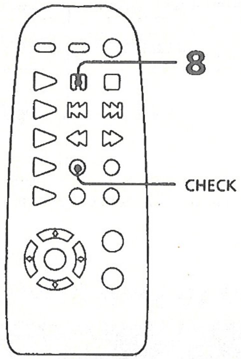
- If you want to record from the reverse side, press ◁ so that ◁ (for reverse side) lights up.
- When you want to reduce the hiss noise in low-level high-frequency signals, press REPEAT/DOLBY NR so that "DOLBY NR B" appears after pressing ●.
- To skip tracks while recording from a tape, press ▷▷ or ◁◁ on deck A. Deck B stands by for recording, and you can skip tracks. To resume dubbing, press ❚❚ on deck B.

Recording a CD by specifying track order

— *Programme Edit*

You can record tracks from all the CDs in the order you want. When programming, make sure the playing times for each side do not exceed the length of one side of the tape.





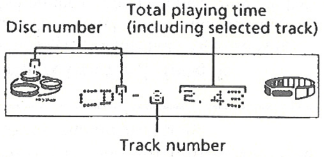
1 Place a CD and insert a blank tape into deck B.

2 Press FUNCTION repeatedly until "CD" appears in the display.

3 Press PLAY MODE repeatedly until "PROGRAM" appears in the display.

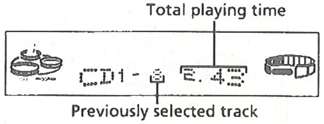
4 Press one of the DISC 1~3 buttons to select a CD.

5 Turn the jog dial until the desired track appears in the display.



6 Press ENTER/NEXT.

The track is programmed. The programme step number appears, followed by the total playing time.



7 To programme additional tracks to be recorded on side A, repeat steps 4 to 6.

Skip step 4 to select tracks from the same disc.

8 Press II on the remote to insert a pause at the end of side A.

"P" appears in the display and the total playing time resets to "0.00" in the display.

9 Repeat steps 5 and 6 for tracks from the same disc or steps 4 to 6 for tracks from another disc to programme the remaining tracks to be recorded on side B.

10 Press CD SYNCHRO.

Deck B stands by for recording and the CD player stands by for playback. ▷ (for front side) lights up.

11 Press EDIT/DIRECTION repeatedly to select ⇌ to record on one side. Select ⊂⊃ (or RELAY) to record on both sides.

12 Press II on deck B.

Recording starts.

To stop recording

Press □ on the deck B or on the CD player.

To check the order

Press CHECK on the remote repeatedly. After the last track, "CHECK END" appears.

To cancel Programme Edit

Press PLAY MODE repeatedly until "PROGRAM" or "SHUFFLE" disappears from the display.

Tip

When you want to reduce the hiss noise in low-level high-frequency signals, press REPEAT/DOLBY NR so that "DOLBY NR B" appears after pressing CD SYNCHRO.

Selecting tape length automatically

—Tape Select Edit

You can check the most suitable tape length for recording a CD. Note that you cannot use Tape Select Edit for discs containing more than 20 tracks.

1 Insert a CD.

2 Press FUNCTION repeatedly until "CD" appears in the display.

3 Press EDIT/DIRECTION once, so that "EDIT" flashes.

The required tape length for the currently selected CD appears, followed by the total playing time and tracks for side A and side B.

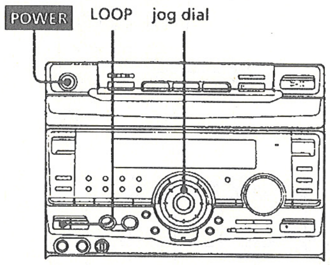
Note

You cannot use this function after programming.
In order to use this function, you must first erase the programme (see "To clear the entire programme" on page 22).

Looping part of a CD

— *Loop*

With the loop function, you can repeat part of a CD during playback. This lets you create original recordings.



➡ Press and hold LOOP during playback at the point you want to start the Loop function, and release to resume normal play.

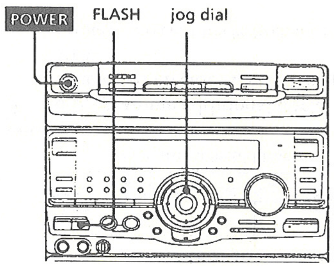
To adjust the loop length

Turn the jog dial while holding LOOP (or press BEAT MENU ⇦ or ⇨ while holding LOOP on the remote) to select different loop lengths (LOOP 1~20).

Flashing part of a CD

— *Flash*

With the flash function, you can "flash" the CD sound during playback. This lets you create original recordings.



➡ Press and hold FLASH during playback at the point you want to start the Flash function, and release to resume normal play.

To adjust the flash length

Turn the jog dial while holding FLASH (or press BEAT MENU ⇦ or ⇨ while holding FLASH on the remote) to select different flash lengths (FLASH 1~20).

To use LOOP and FLASH together

Press and hold both LOOP and FLASH at the same time.

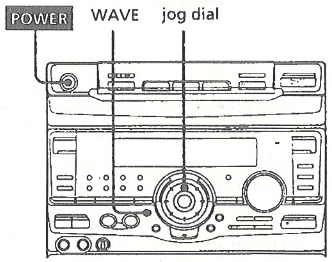
Notes

- The loop and flash length cannot be adjusted during this operation. Adjust the loop and flash lengths independently beforehand if necessary.
- To record the flash effect, use the analog (VIDEO/ MD OUT) connections or this unit's tape deck.

Waving the equalizer

— *Wave*

With the Wave function, you can fluctuate the graphic equalizer automatically. This effect can be used with any source, but it cannot be recorded.



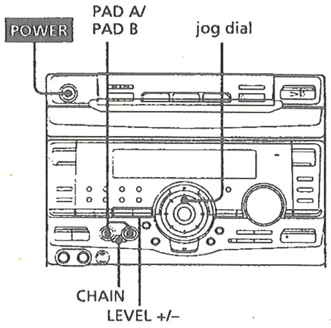
➡ Press and hold WAVE to start the Wave function, and release to resume normal listening.

To adjust the wave length

Turn the jog dial while holding WAVE to select a different wave length (WAVE 1~10).

Using the drum pads

With the drum pads, you can add percussion during playback. This effect can be used with any source, to create original recordings.



➡ Tap drum pad A or B to produce the respective sound.

To change the drum sound

Press and hold down pad A or B and turn the jog dial to select the sound you desire. You can select from 21 different drum sounds. The name of the drum sound appears in the display.

KICK←→SNARE←→ . . . ←→SCRATCH PUSH

The sound you select will be stored in pad A or B.

To create a drum roll

Turn the jog dial while holding down CHAIN. You can vary the speed of the drums by turning the jog dial counterclockwise (for pad A) or clockwise (for pad B).

To adjust the volume of the pads

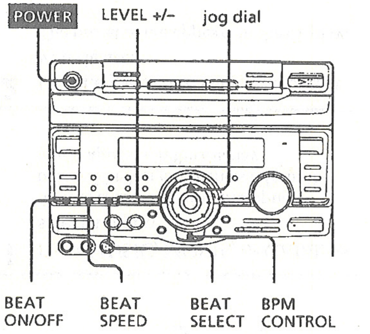
Press LEVEL + or –.

Note

When the APPLAUSE MIX function is selected, you will not hear the drum pad during the applause.

Using the beat function

With the beat function, you can create a variety of rhythms automatically. This effect can be used with any source, to create original recordings.



1. Press BEAT ON/OFF to make sure the indicator is off, then start playing a source.
2. Press BPM CONTROL repeatedly to obtain the beat speed you desire.

   Every time you press the button a voice says, "one, two, three, four, one . . .", the speeds (BPM 70~140) are also displayed. The beat speed is memorized automatically.
3. Press BEAT ON/OFF to start the beat.

   Pressing BPM CONTROL lets you synchronize the beat with the source.

To change the speed

Hold down BEAT SPEED and turn the jog dial (or press BEAT SPEED +/– on the remote) to select the speed you desire (BPM 70~140).

To change the beat pattern

You can select from 8 different beat patterns. Hold down BEAT SELECT and turn the jog dial (or press BEAT SELECT +/– on the remote) to select the pattern you desire. The name of the beat pattern appears in the display.

16 BEAT 1 ↔ 16 BEAT 2 ↔ . . . ↔ SAMBA

To cancel the beat

Press BEAT ON/OFF. Make sure the indicator is off.

To change the beat volume

Press LEVEL + or –.

Tip

You can use the drum pads and the beat function together.

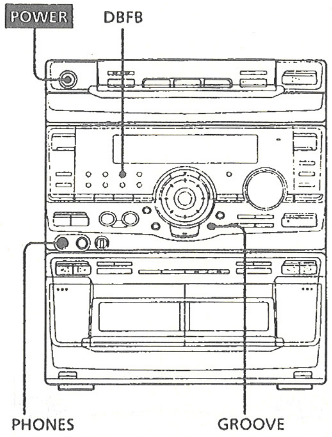
Note

When the APPLAUSE MIX function is selected, you will not hear the drum beat during the applause.

Sound Adjustment

Adjusting the sound

You can reinforce the bass, create a more powerful sound, and listen with headphones.



To reinforce bass (DBFB)

Press DBFB*.

Every time you press the button, the display changes as follows:

DBFB ◣\\\ → DBFB ◣\\\\\\ → display off

"DBFB ◣\\\\\\" is more effective than "DBFB ◣\\\"

* DBFB = Dynamic Bass Feedback

For a powerful sound (GROOVE)

Press GROOVE. The volume switches to power mode, DBFB is automatically set to full strength, the equalizer curve changes, and the "GROOVE" button lights up. Press GROOVE again to return to the previous volume.

Notes

- With some songs, the music will sound distorted when you use the DBFB system with the graphic equalizer if the bass is too strong. Adjust the bass slowly while listening to music so that you can monitor the effect of the adjustment.
- Cancelling GROOVE sets DBFB to "DBFB ◣\\\" and flattens the equalizer curve. To cancel the DBFB level, press DBFB until the indication disappears. Adjust the equalization to obtain the effect you desire.

To listen through the headphones

Connect the headphones to PHONES jack. No sound will come from the speakers.

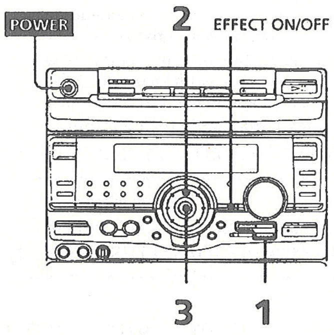
Note

If you have connected a super woofer, please note that sound comes from the super woofer even when the headphones are connected. Turn off the power of the super woofer when using headphones.

Selecting the audio emphasis

The audio emphasis menu lets you select the sound characteristic according to the sound you are listening to.

The personal file function (see "Making a personal audio emphasis file") lets you store your own effects.



1 Press MUSIC, MOVIE, or GAME to select a menu.
See the chart "Music menu options" below. The last effect chosen from that menu appears in the display.

2 Use the jog dial to select the preset you desire.
The preset name appears in the display.

3 Press ENTER/NEXT.

To cancel the effect

Press EFFECT ON/OFF repeatedly so that "EFFECT OFF" appears in the display.

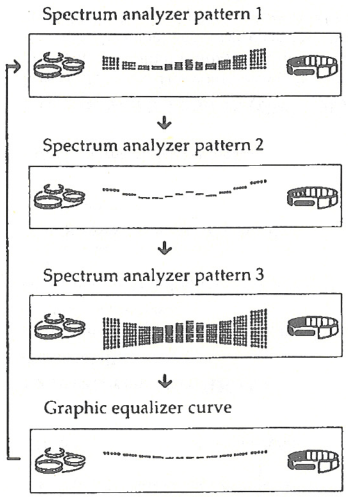
Music menu options

"SUR ▮▮▮▮▮▮▮" appears if you select an effect with surround effects.

MENU button	Effect	For
MUSIC	ROCK POP JAZZ DANCE SOUL	Standard music sources
MOVIE	ACTION SF ROMANCE DRAMA SPORTS	Soundtracks and special listening situations
GAME	SHOOTING BATTLE RACING RPG ADVENTURE	Video games

To change the equalizer display

Each time you press DISPLAY/DEMO, the equalizer display changes to show one of the four displays below.


Spectrum analyzer pattern 1
Spectrum analyzer pattern 2
Spectrum analyzer pattern 3
Graphic equalizer curve

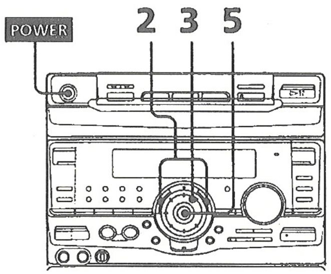
Adjusting the audio emphasis

You can adjust the audio emphasis using the graphic equalizer and surround effect.

Adjusting the graphic equalizer

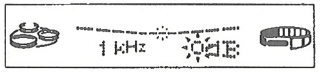
You can adjust the sound by raising or lowering the levels of specific frequency ranges.

Before operation, first select the audio emphasis you want for your basic sound.



1 Select the audio emphasis you want for your basic sound (see "Selecting the audio emphasis").

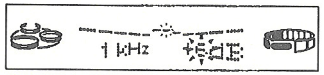
2 Press HIGH FREQUENCY or LOW FREQUENCY repeatedly to select a frequency band.



continued

Adjusting the Audio Emphasis (continued)

3 Turn the jog dial to adjust level.



4 Repeat steps 2 and 3.

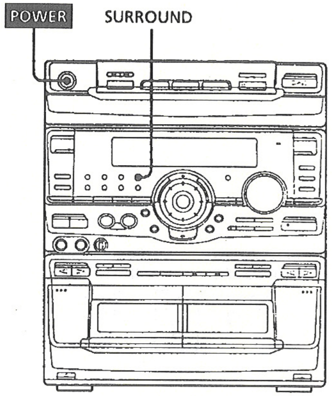
5 Press ENTER/NEXT when finished.

Note

If you choose another menu audio emphasis (other than "EFFECT OFF") the adjusted sound effect is lost. To retain the adjusted sound effect for future use, store it in a personal file. (See "Making a personal audio emphasis file".)

Activating the surround effect

You can enjoy the surround effect.



➡ Press SURROUND repeatedly so that "SUR ||||||||||" appears in the display.

Note

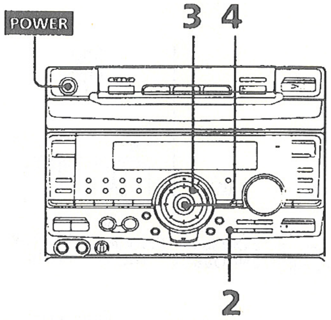
When you choose other sound effects, the surround effects will be canceled. If you want to memorize the effect, store it into a personal file (see "Making a personal audio emphasis file").

Making a personal audio emphasis file

—Personal file

You can create a personal file of audio patterns (surround effect and graphic equalizer) and store them in the memory of the unit. Later call up an audio pattern to play a favourite tape, CD, or radio programme. Create up to five audio files.

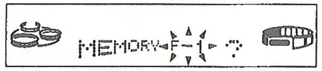
Before operation, first select the audio emphasis you want for your basic sound.



1 Obtain the sound effect you want by using the graphic equalizer and surround effect.

2 Press MEMORY.

The personal file number appears in the display.



3 Use the jog dial to select the file number (P FILE) where you want to store the sound effect.

4 Press ENTER/NEXT.

The adjusted sound effects are stored under the selected file number. The settings previously stored at this memory location are erased and replaced by the new settings.

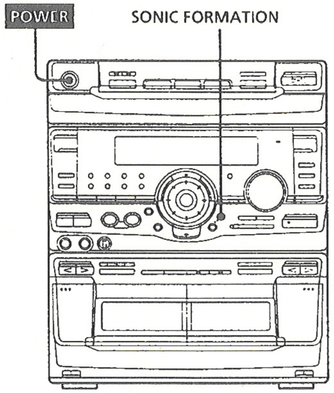
To call up the personal file

1. Press P FILE to display the last selected personal file.
2. Use the jog dial to select the personal file you desire.
3. Press ENTER/NEXT.

Switching the Speaker Formation

–Sonic formation

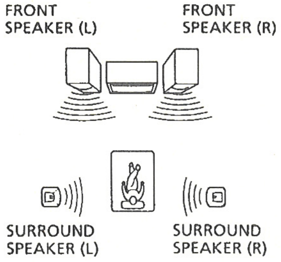
You can select from four speaker formations depending on your listening situation.


POWER
SONIC FORMATION

➡ Press SONIC FORMATION repeatedly until the mode you want appears in the display.
As you press SONIC FORMATION, the mode changes as follows:
NORMAL → WHISPER → LINK
↑—— FRONT ONLY ←┘

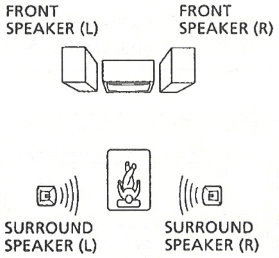
NORMAL mode

The surround speakers provide reverberation and reflective sound effects that emphasize the sound from the front speakers.


FRONT SPEAKER (L)
FRONT SPEAKER (R)
SURROUND SPEAKER (L)
SURROUND SPEAKER (R)

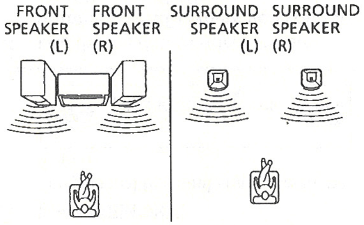
WHISPER mode

The sound from the front speakers is cut off and output from the surround speaker with its sound decreased. For instance, when you want to listen to the sound in bed, it is suitable to set the surround speakers on either side of the bed.


FRONT SPEAKER (L)
FRONT SPEAKER (R)
SURROUND SPEAKER (L)
SURROUND SPEAKER (R)

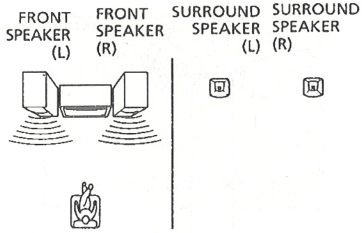
LINK mode

The same sound is output from the front speakers and surround speakers. For instance, when you want to listen to the same sound in two rooms, it is suitable to set the front speakers and the surround speakers in each room.


FRONT SPEAKER (L)
FRONT SPEAKER (R)
SURROUND SPEAKER (L)
SURROUND SPEAKER (R)

FRONT ONLY mode

No sound is output from the surround speakers. Sound comes from the front speakers only.


FRONT SPEAKER (L)
FRONT SPEAKER (R)
SURROUND SPEAKER (L)
SURROUND SPEAKER (R)

Note

Do not place the surround speakers on top of a TV. This may cause distortion of the colours in the TV screen.

Using the Radio Data System (RDS)

(For Western European model only)

What is the Radio Data System?

Radio Data System (RDS) is a broadcasting service that allows radio stations to send additional information along with the regular programme signal. This tuner offers convenient RDS features like station name display and location of stations by programme type. RDS is available only on FM stations.*

Note

RDS may not work properly if the station you are tuned to is not transmitting the RDS signal properly or if the signal strength is weak.

* Not all FM stations provide RDS service, nor do they provide the same type of services. If you are not familiar with the RDS system, check with your local radio stations for details on RDS services in your area.

Receiving RDS broadcasts

➡ Simply select a station from the FM band.
When you tune in a station that provides RDS services, the station name appears in the display.

To check the RDS information

Each time you press DISPLAY/DEMO, the display changes as follows:

→ Station name*
↓
Frequency
↓
Programme type*
↓
Clock display
↓
Effect (P FILE) name or "EFFECT ON (OFF)"

* If the RDS broadcast is not received, the station name and programme type may not appear in the display

Locating a station by programme type (PTY)

You can locate a station you want by selecting a programme type. The unit tunes in the type of programmes currently being broadcast from the RDS stations stored in the tuner's preset memory.

1 Press PTY

2 Turn jog dial to select the programme type you want. See the "List of programme types" section below.

3 Press ENTER/NEXT.
The unit starts searching the preset RDS stations ("SEARCH" and the selected programme type are shown alternately in the display).
When the tuner receives a programme, the preset station number flashes.

4 Turn jog dial to display the preset station number you desire.

5 Press ENTER/NEXT while the preset station number is flashing.

To cancel PTY search

Press PTY again.

List of programme types (PTY)

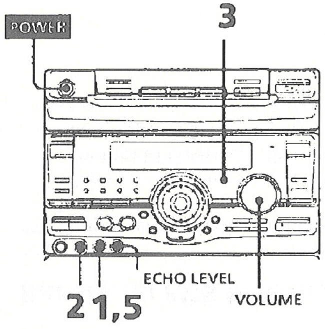
AFFAIRS	Topical programmes that expand on current news.
ALARM	Emergency broadcasts.
CULTURE	Programmes about national or regional culture.
DRAMA	Radio plays and serials
EDUCATE (Education)	Educational programmes, such as "how-to" programmes and advice.
INFO (Information)	Programmes about consumer affairs, medical advice, and weather.
LIGHT MUSIC	Classical music, such as instrumentals, and vocal and choral works.
M.O.R. MUSIC	Easy listening (middle of the road music).
NEWS	News programmes
OTHER MUSIC	Music, such as jazz, rhythm and blues, and reggae.
POP MUSIC	popular music programmes
ROCK MUSIC	Rock music programmes
SCIENCE	Programmes about the natural sciences
CLASSICS	Performances of major orchestras, chamber music, opera, etc.
SPORT	Sports programmes
VARIED	Programmes containing celebrity interviews, panel games, and comedy.
NONE	Any programming not defined above

Note

"NO PTY" appears when the programme type that you selected is not currently being broadcast.

Singing along: Karaoke

You can sing along with any stereo CD or tape by turning down the singer's voice. You need to connect an optional microphone.



1 Turn MIC LEVEL to 0 to turn down the microphone control level.

2 Connect an optional microphone to MIX MIC.

3 Press KARAOKE PON/MPX repeatedly to obtain the karaoke effect you desire.

Every time you press the button, the display changes as follows:

KARAOKE PON → MPX R → MPX L
└── EFFECT OFF ←──┘

The indicator appears in the display when a karaoke mode is activated.

To sing karaoke with decreasing the vocal level of a CD, select KARAOKE PON. To sing karaoke of multiplex CD or tape, select MPX R or MPX L.

4 Start playing the music and adjust the volume.

5 Adjust the microphone volume by turning MIC LEVEL.

Adjusting the microphone echo (Middle Eastern Model only)

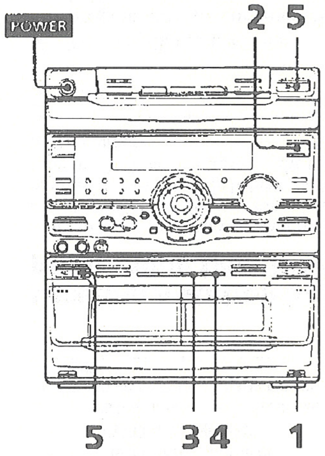
Turn ECHO LEVEL to adjust the echo effect.

To cancel the echoing, turn ECHO LEVEL to 0.

When you are done

Turn MIC LEVEL to 0 and disconnect the microphone from MIX MIC, then press KARAOKE PON/MPX repeatedly so that "" disappears.

Mixing and recording sounds



1 Do the above steps 1 to 5. Then, insert a tape in deck B.

2 Press FUNCTION repeatedly to select the source you desire and set it to pause mode.

3 Press ●.

4 Press ⏸.

5 Press ▷ to start playing the CD player (or tape deck A).

Playback starts. Start singing along with the music.

To stop recording

Press ■ on deck B and the CD player.

Tips

- If acoustic feedback (howling) occurs, move the microphone away from the speakers or change the direction of the microphone.
- If you want to record your voice through the microphone only, you can do so by selecting the CD function and not playing a CD.

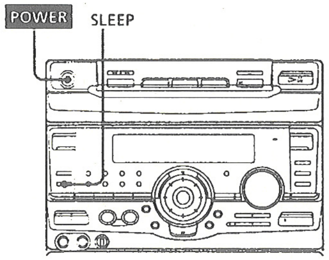
Notes

- If you press EFFECT ON/OFF or recall a sound effect, the karaoke mode is cancelled.
- The instrumental sound may be reduced as well as the singer's voice when the sound is recorded in monaural.
- The singer's voice may not be reduced when:
  - —only a few instruments are playing
  - —a duet is being played
  - —the source has strong echoes or chorus
  - —the singer's voice deviates from the centre.
  - —the voice on the source is singing in high soprano or tenor.

Falling asleep to music

— *Sleep Timer*

You can let the system turn off at the preset time, so you can sleep to the music. You can preset the time to be turned off by 10 minutes.



➡ Press SLEEP.

Every time you press the button, the minute display (the turn-off time) changes as follows:

AUTO → 90min → 80min → 70min
→ ··· → 10min → OFF → AUTO ···

When you choose auto

The power turns off when the current CD or tape finishes playback (for up to 100 minutes).

To check the remaining time

Press SLEEP once.

To change the time to turn off

Select the time you want by pressing SLEEP.

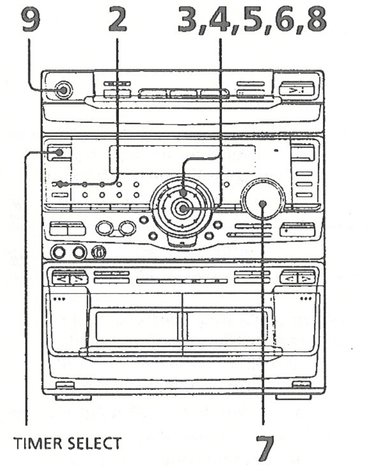
To cancel the Sleep Timer function

Press SLEEP repeatedly until "OFF" appears.

Waking up to music

— *Wake-up Timer*

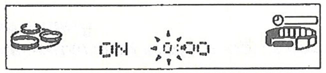
You can wake up to music at a preset time every day. Make sure you have set the clock (see "Step 2: Setting the time").



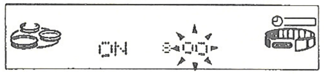
1 Prepare the music source you want to play.
- CD: Insert a CD. To start from a specific track, make a programme (see "Programming the CD tracks").
- Tape: Insert an tape with the side you want to play facing forward.
- Radio: Tune in the preset station you want (see "Step 3: Presetting radio stations").

2 Press CLOCK/TIMER SET.
"SET (DAILY 1)" appears.

3 Turn jog dial to select DAILY 1 or 2, then press ENTER/NEXT.
"ON" appears and the hour digits flash in the display.



4 Set the time to start playback.
Turn jog dial to set the hour, then press ENTER/NEXT.
The minute indication starts flashing.



Turn jog dial to set the minute, then press ENTER/NEXT.
The hour indication flashes again.

5 Set the time to stop playback following the above procedure.

6 Turn jog dial until the music source you want appears.
The indications change as follows:
TUNER → CD PLAY → TAPE PLAY

7 Adjust the volume.

8 Press ENTER/NEXT.
The start time, followed by the stop time and the music source, appears, then the original display appears.

9 Turn off the power.

To check the setting

Press TIMER SELECT and turn the jog dial to select the respective mode (DAILY 1 or DAILY 2), then press ENTER/NEXT. To change the setting, start over from step 1.

To cancel the timer operation

Press TIMER SELECT and turn the jog dial to select "OFF", then press ENTER/NEXT.

Tip

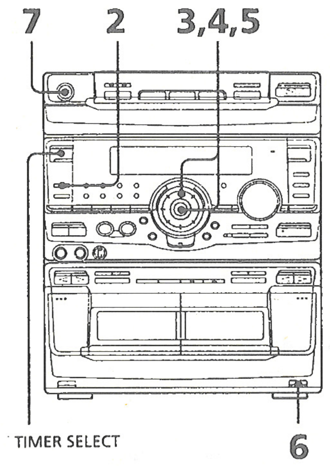
The power turns on 15 minutes before the preset time.

Note

When setting the wake-up timer, set the equalizer display to anything other than Spectrum analyzer pattern 3 (See "To change the equalizer display" on page 31).

Timer-recording radio programmes

To timer-record, you must preset the radio station (see "Step 3: Presetting radio stations") and set the clock (see "Step 2: Setting the time") beforehand.



1 Tune in the preset radio station (see "Listening to the radio").

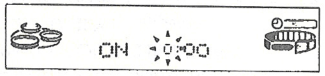
2 Press CLOCK/TIMER SET.
"SET (DAILY 1)" appears.

continued

Timer-recording radio programmes (continued)

3 Turn jog dial to select REC, then press ENTER/NEXT.

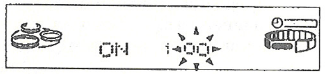
"ON" appears and the hour digits flash in the display.



4 Set the time to start recording.

Turn jog dial to set the hour, then press ENTER/NEXT.

The minute indication starts flashing.



Turn jog dial to set the minute, then press ENTER/NEXT.

The hour indication flashes again.

5 Set the time to stop recording following the above procedure.

The start time appears, followed by the stop time, the recording source and the radio station, then the original display appears.

6 Insert a recordable tape.

7 Turn off the power.

When the recording starts, the volume level is set to the minimum.

To check the setting

Press TIMER SELECT and turn the jog dial to select "REC", then press ENTER/NEXT. To change the setting, start over from step 1.

To cancel the timer operation

Press TIMER SELECT and turn the jog dial to select "OFF", then press ENTER/NEXT.

Notes

- When setting the timer-recording, set the equalizer display to anything other than Spectrum analyzer pattern 3 (See "To change the equalizer display" on page 31).
- If the power is on at the preset time, the recording will not be made.

Additional Information

Precautions

On operating voltage

Before operating the system, check that the operating voltage of your system is identical with the voltage of your local power supply.

On safety

- The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the unit itself has been turned off.
- Unplug the system from the wall outlet (mains) if it is not to be used for an extended period of time. To disconnect the cord (mains lead), pull it out by the plug. Never pull the cord itself.
- Should any solid object or liquid fall into the component, unplug the stereo system and have the component checked by qualified personnel before operating it any further.
- The mains lead must be changed only at the qualified service shop.

On placement

- Place the stereo system in a location with adequate ventilation to prevent heat build-up in the stereo system.
- Do not place the unit in an inclined position.
- Do not place the unit in locations where it is;
  - — Extremely hot or cold
  - — Dusty or dirty
  - — Very humid
  - — Vibrating
  - — Subject to direct sunlight

On operation

- If the stereo system is brought directly from a cold to a warm location , or is placed in a very damp room, moisture may condense on the lens inside the CD player. Should this occur, the system will not operate properly. Remove the CD and leave the system turned on for about an hour until the moisture evaporates.
- When you move the system, take out any discs.

If you have any questions or problems concerning your stereo system, please consult your nearest Sony dealer.

Notes on CDs

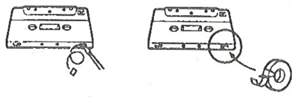
- Before playing, clean the CD with a cleaning cloth. Wipe the CD from the centre out.
- Do not use solvents such as benzene, thinner, commercially available cleaners or anti-static spray intended for vinyl LPs.
- Do not expose the CD to direct sunlight or heat sources such as hot air ducts, nor leave it in a car parked in direct sunlight.

Cleaning the cabinet

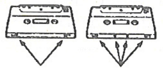
Use a soft cloth slightly moistened with mild detergent solution.

To save a tape permanently

To prevent a tape from being accidentally recorded over, break off the cassette tab from side A or B as illustrated. If you later want to reuse the tape for recording, cover the broken tab with adhesive tape.



When you are using a TYPE II (CrO2) or TYPE IV (metal) cassette, be careful not to cover the detector slots which allow the tape player to automatically detect the type of tape.



Detector slots

continued

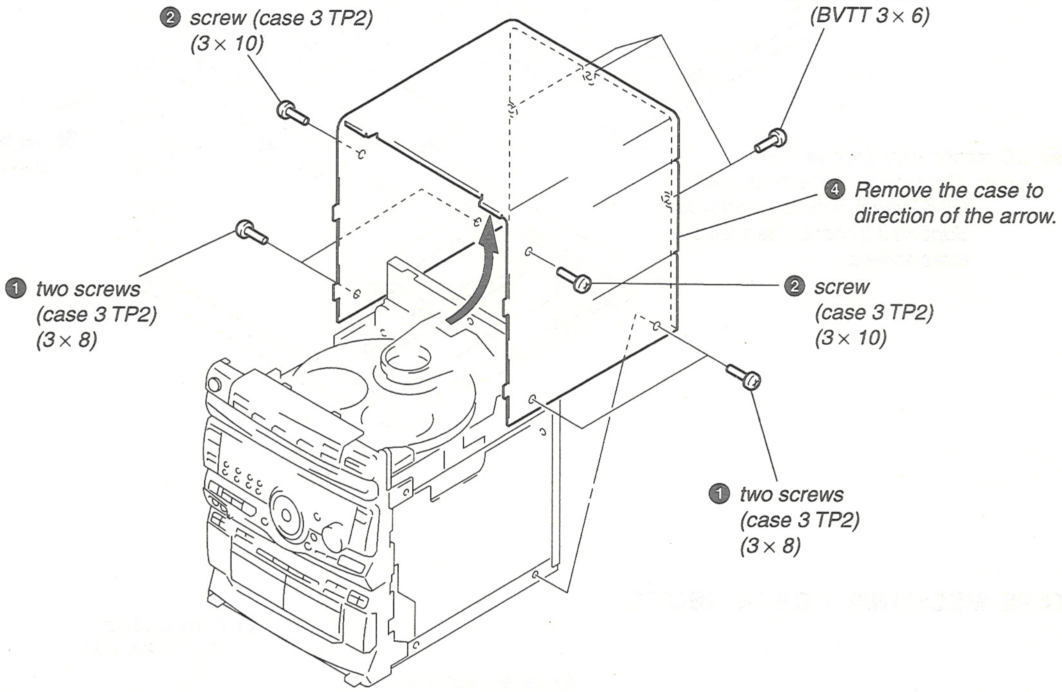
SECTION 2
DISASSEMBLY

- This set can be disassembled in the order shown below.

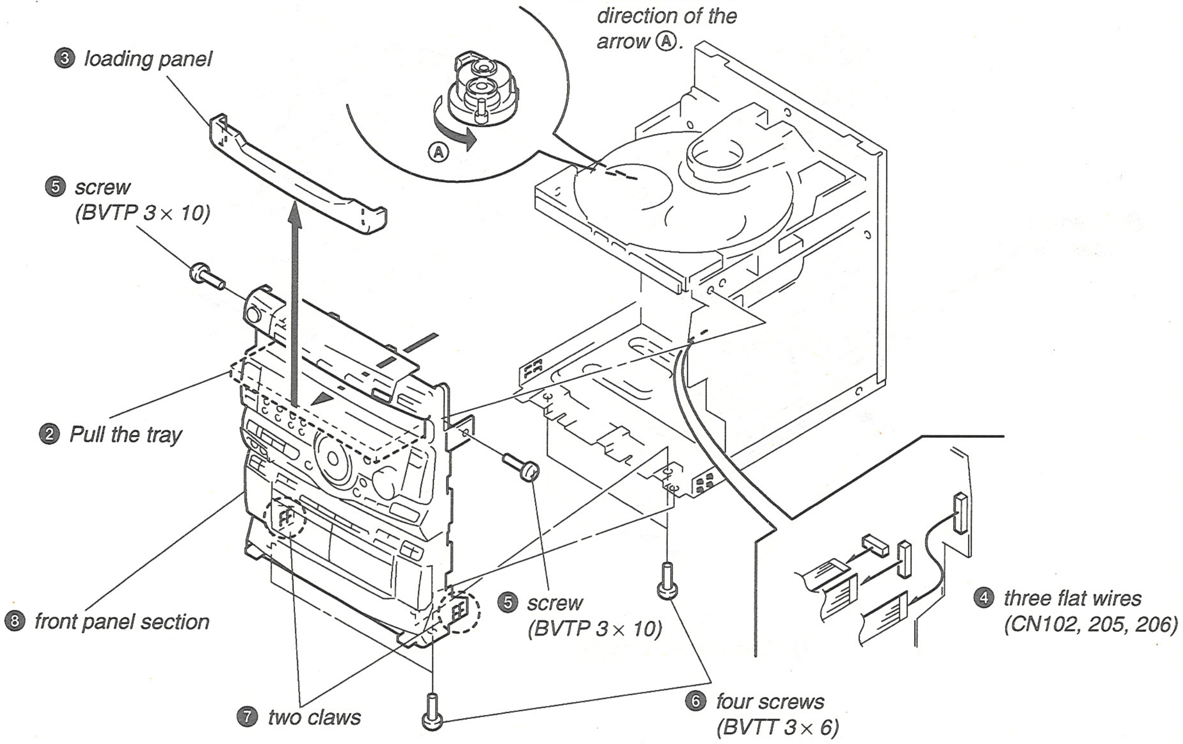
CASE (Page 25) → FRONT PANEL SECTION (Page 25)
- → CD MECHANISM DECK SECTION (Page 26)
  - → BASE UNIT (Page 27) → BD BOARD (Page 29)
    - → OPTICAL PICK-UP (Page 29)
    - → SLED MOTOR (Page 29)
  - → MAIN BOARD (Page 27)
  - → TRAY SECTION (Page 28)
- → TAPE MECHANISM DECK SECTION (Page 26) → AUDIO BOARD (Page 30) → CAPSTAN MOTOR (Page 30)

Note: Follow the disassembly procedure in the numerical order given.

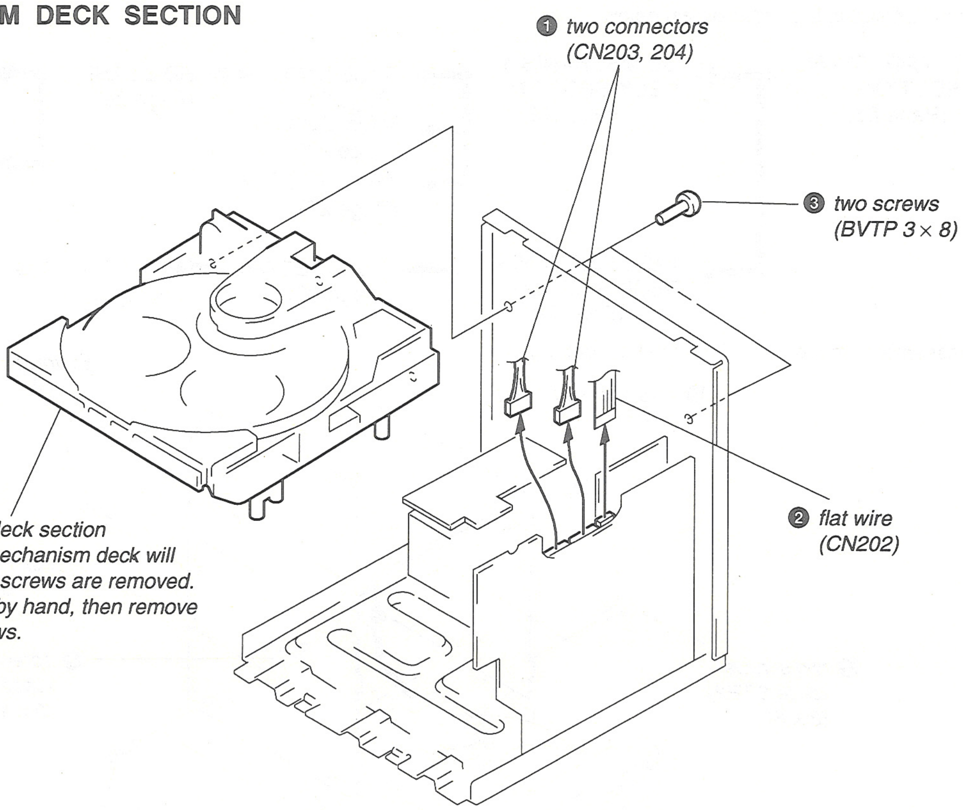
CASE


② screw (case 3 TP2) (3 × 10)
③ three screws (BVTT 3 × 6)
④ Remove the case to direction of the arrow.
① two screws (case 3 TP2) (3 × 8)
② screw (case 3 TP2) (3 × 10)
① two screws (case 3 TP2) (3 × 8)

FRONT PANEL SECTION

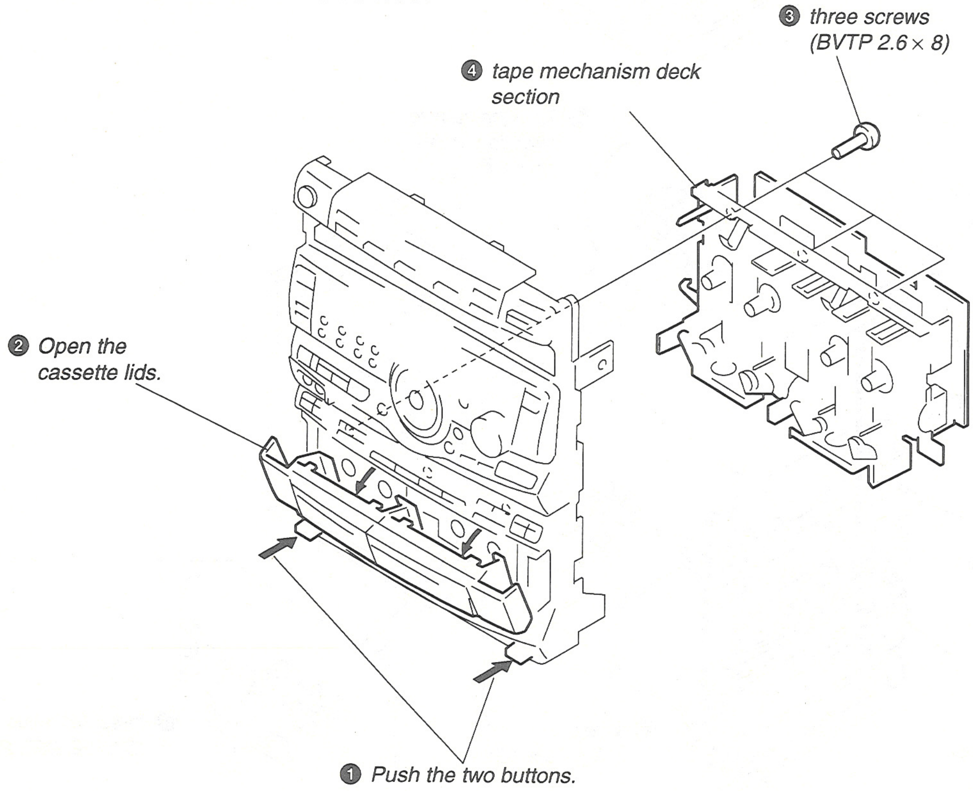

① Turn the cam to direction of the arrow Ⓐ.
Ⓐ
③ loading panel
⑤ screw (BVTP 3 × 10)
② Pull the tray
⑧ front panel section
⑤ screw (BVTP 3 × 10)
④ three flat wires (CN102, 205, 206)
⑦ two claws
⑥ four screws (BVTT 3 × 6)

CD MECHANISM DECK SECTION

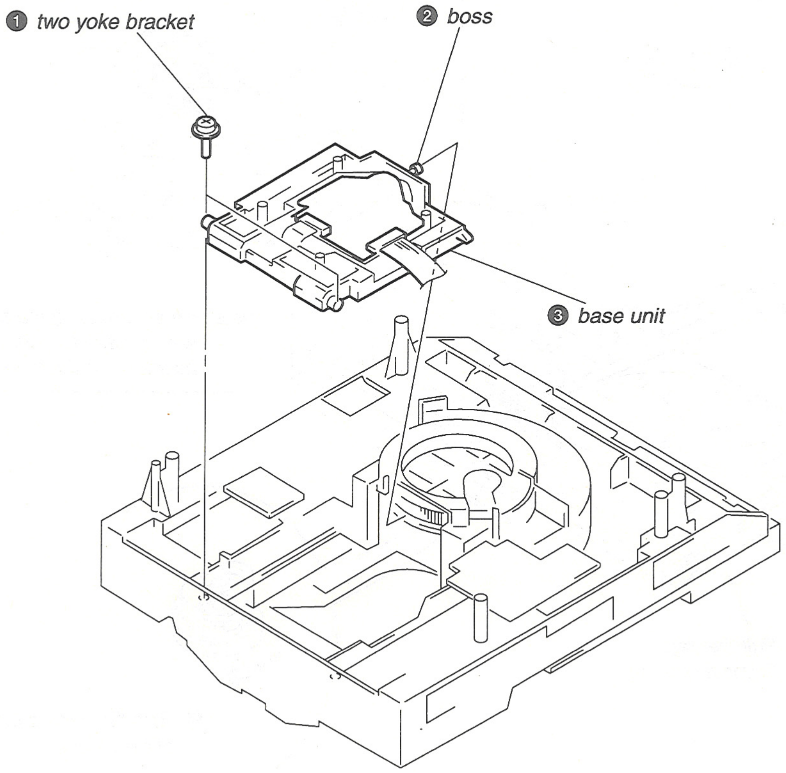

➊ two connectors
(CN203, 204)
➌ two screws
(BVTP 3 × 8)
➋ flat wire
(CN202)
➍ CD mechanism deck section

Note: The CD mechanism deck will fall if three screws are removed. Support it by hand, then remove three screws.

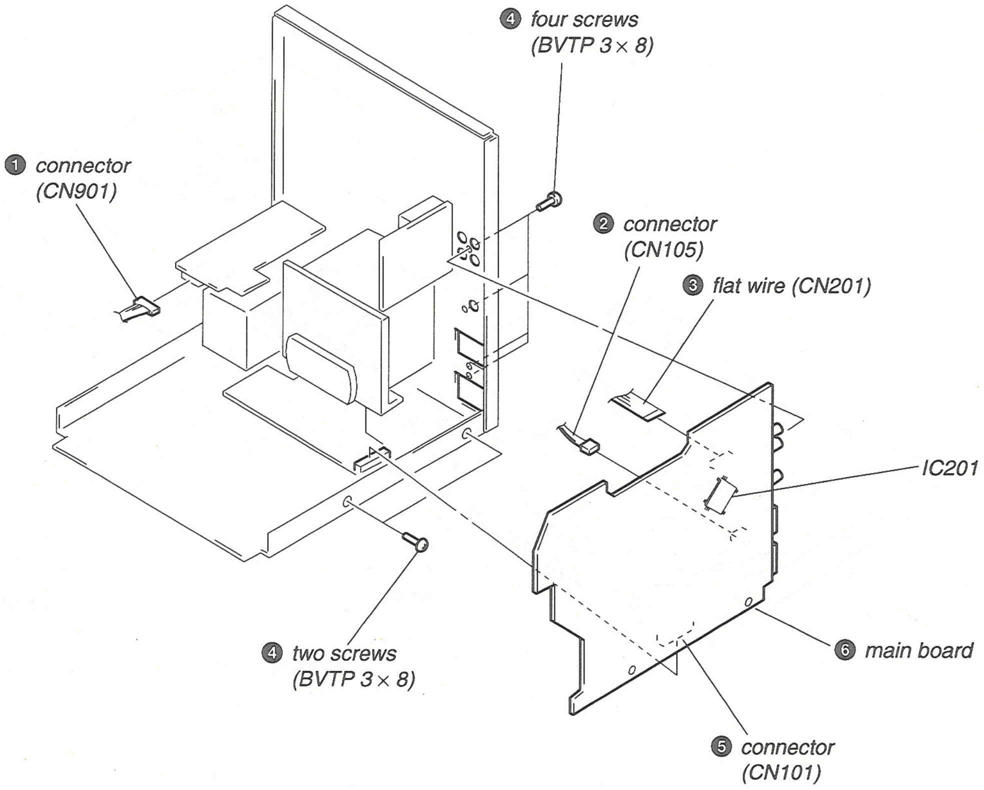
TAPE MECHANISM DECK SECTION


➌ three screws
(BVTP 2.6 × 8)
➍ tape mechanism deck
section
➋ Open the
cassette lids.
➊ Push the two buttons.

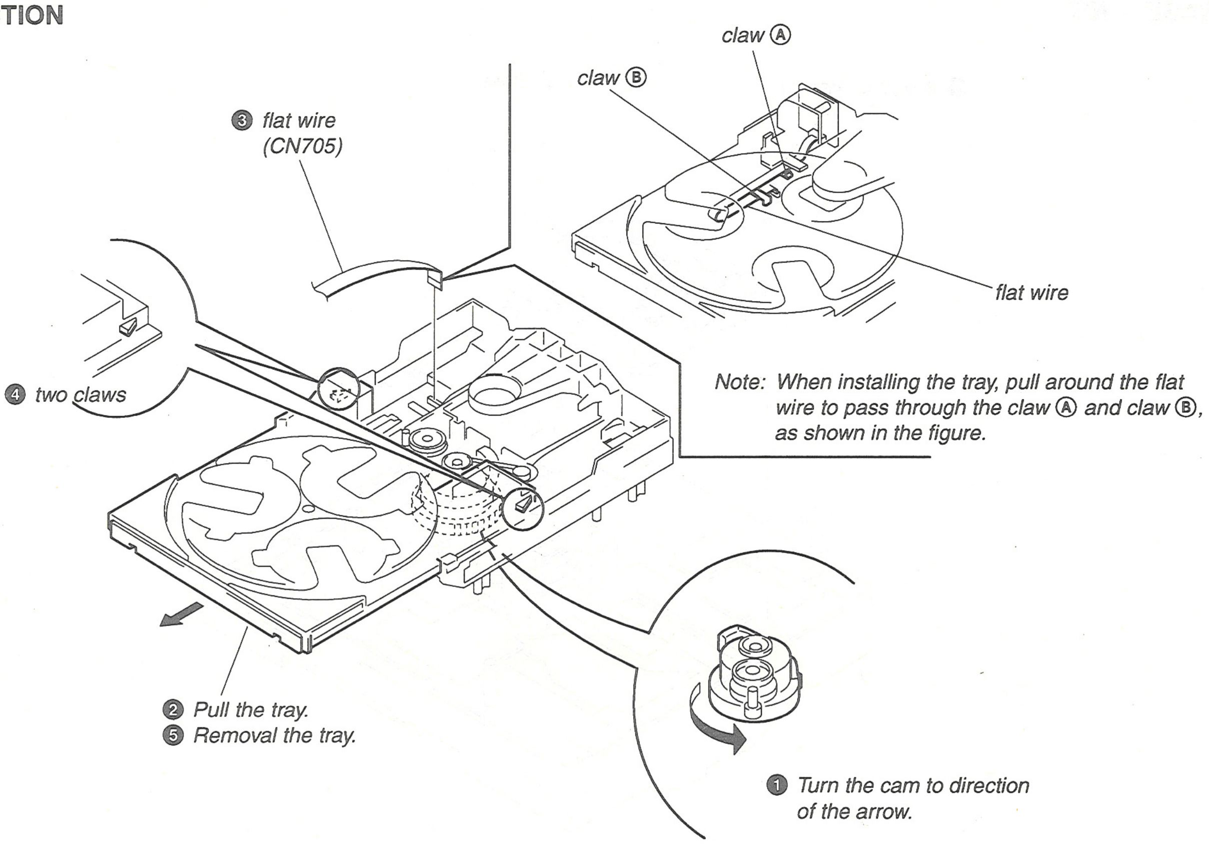
BASE UNIT


❶ two yoke bracket
❷ boss
❸ base unit

MAIN BOARD


❹ four screws
(BVTP 3 × 8)
❶ connector
(CN901)
❷ connector
(CN105)
❸ flat wire (CN201)
IC201
❹ two screws
(BVTP 3 × 8)
❻ main board
❺ connector
(CN101)

TRAY SECTION


claw Ⓐ
claw Ⓑ
flat wire
④ two claws

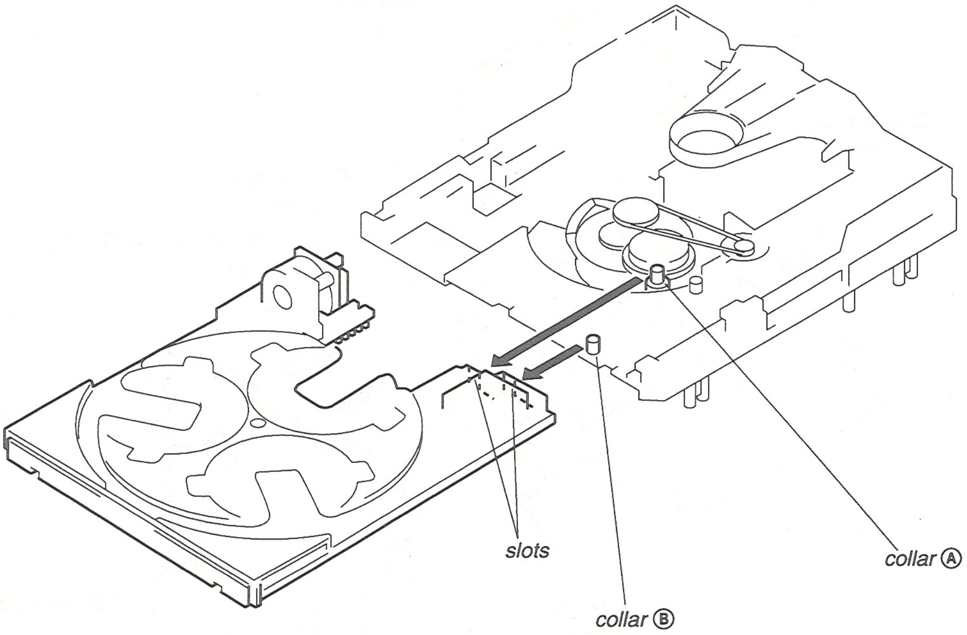
③ flat wire (CN705)

② Pull the tray.
⑤ Removal the tray.

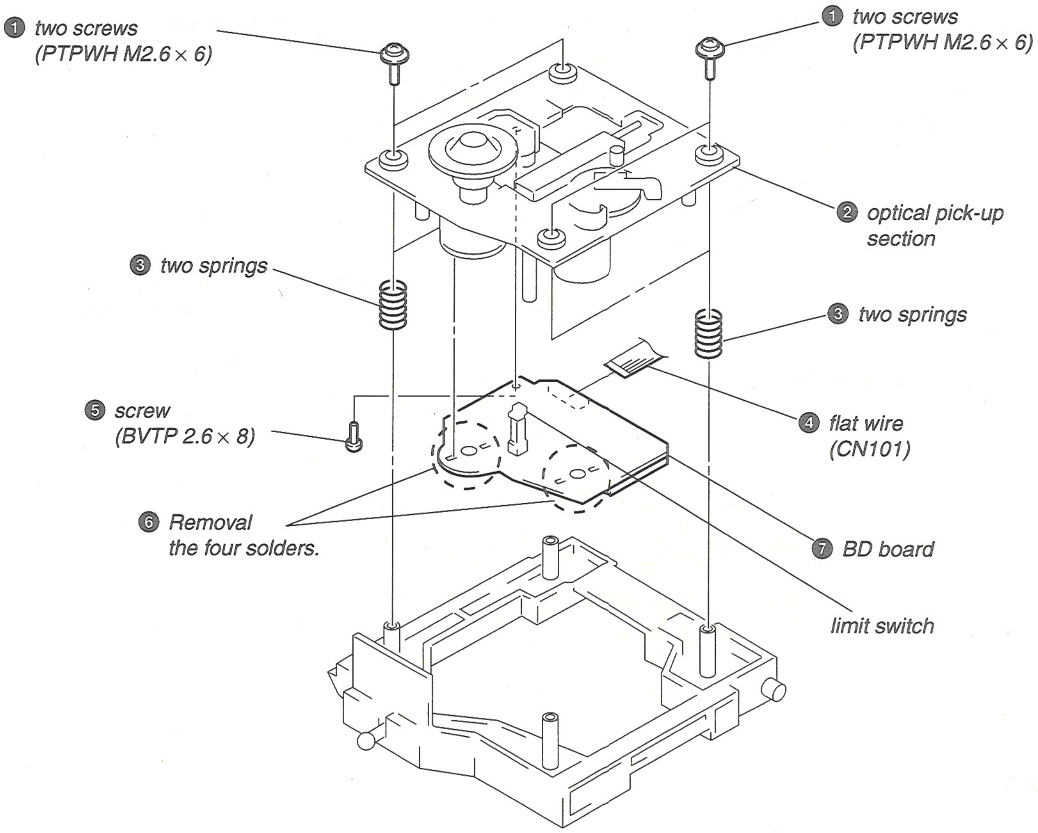
① Turn the cam to direction of the arrow.

Note: When installing the tray, pull around the flat wire to pass through the claw Ⓐ and claw Ⓑ, as shown in the figure.

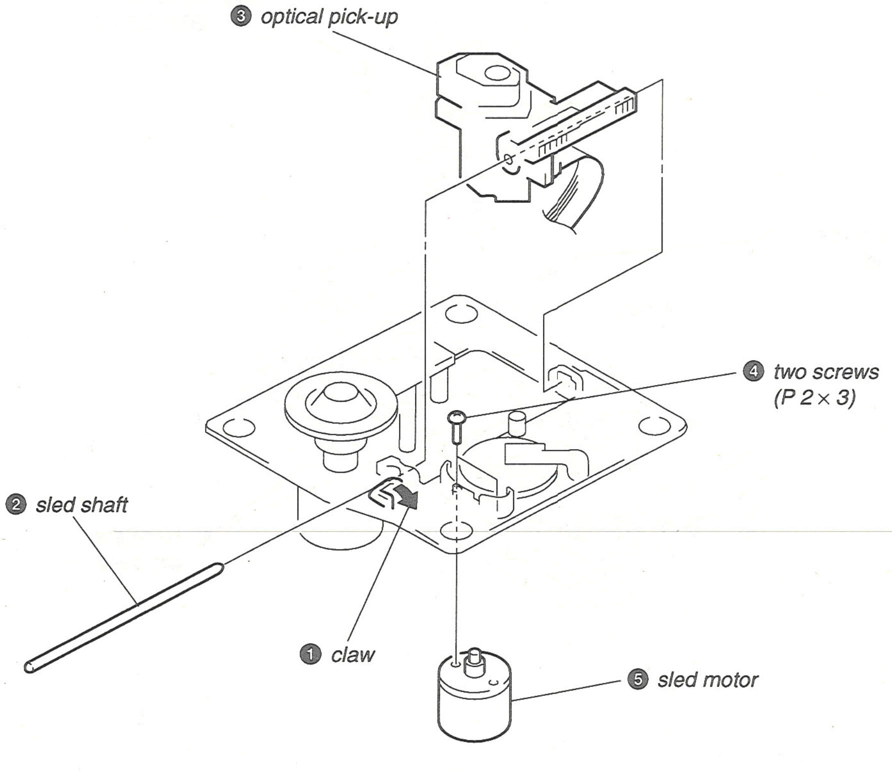
Note: When installing the tray, take care so that the collars (A) and (B) are properly inserted into the slots.


slots
collar Ⓐ
collar Ⓑ

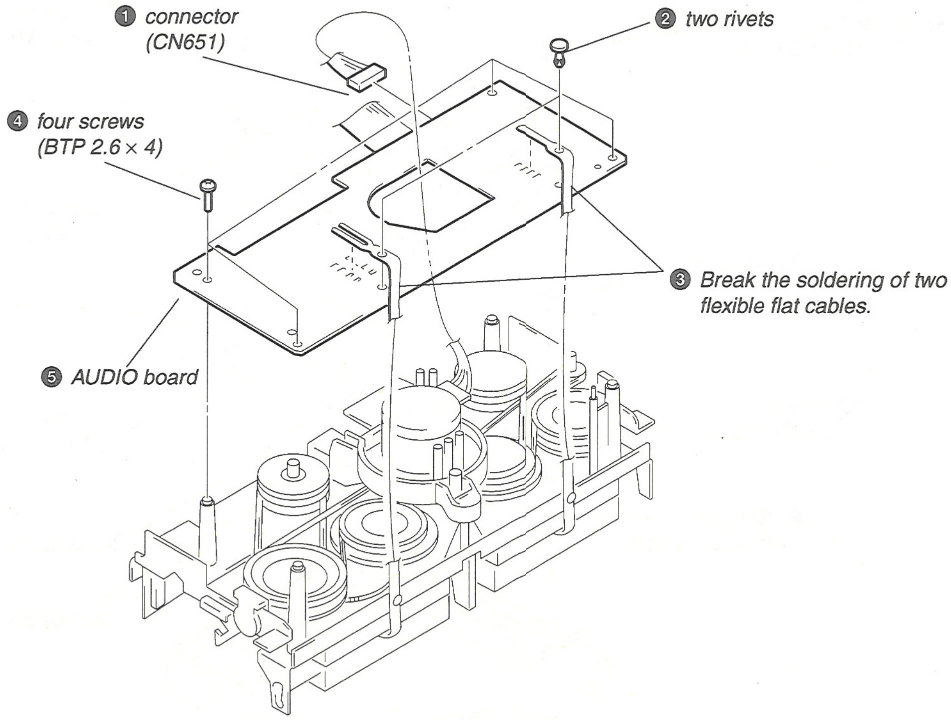
BD BOARD


① two screws
(PTPWH M2.6 × 6)
① two screws
(PTPWH M2.6 × 6)
② optical pick-up
section
③ two springs
③ two springs
⑤ screw
(BVTP 2.6 × 8)
④ flat wire
(CN101)
⑥ Removal
the four solders.
⑦ BD board
limit switch

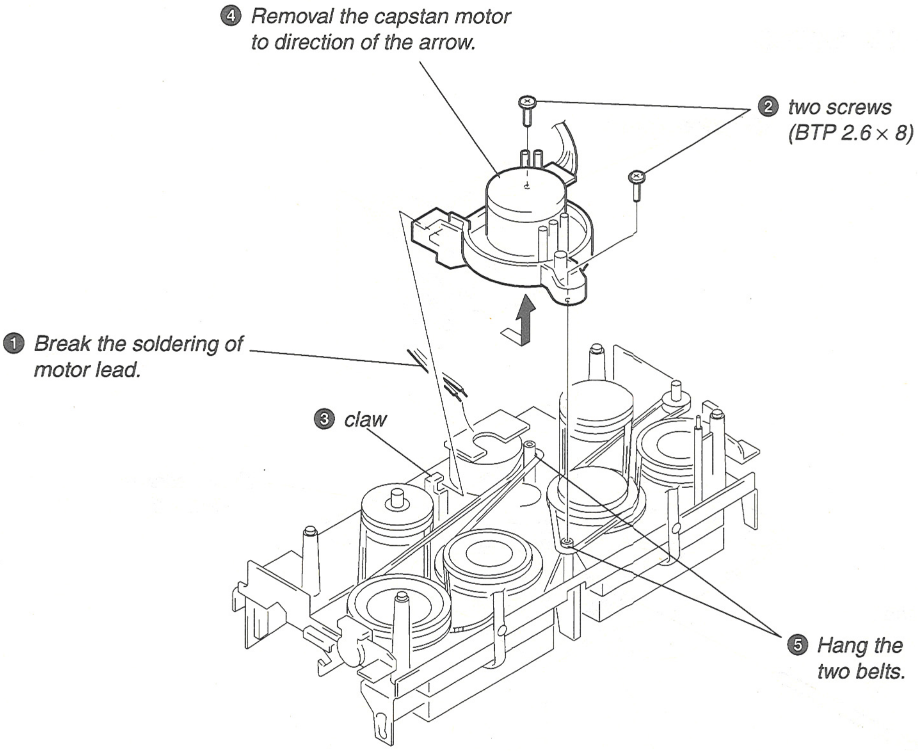
OPTICAL PICK-UP, SLED MOTOR


③ optical pick-up
④ two screws
(P 2 × 3)
② sled shaft
① claw
⑤ sled motor

AUDIO BOARD


① connector (CN651)
② two rivets
④ four screws (BTP 2.6 × 4)
③ Break the soldering of two flexible flat cables.
⑤ AUDIO board

CAPSTAN MOTOR


④ Removal the capstan motor to direction of the arrow.
② two screws (BTP 2.6 × 8)
① Break the soldering of motor lead.
③ claw
⑤ Hang the two belts.

SECTION 3

TEST MODE

[MC Cold Reset]

- The cold reset clears all data including preset data stored in the RAM to initial conditions. Execute this mode when returning the set to the customer.

Procedure:

1. Press three buttons SPECTRUM ANALYZER , ENTER/NEXT , and DISC 1 simultaneously.
2. The fluorescent indicator tube becomes blank instantaneously, and the set is reset.

[CD Delivery Mode]

- This mode moves the pickup to the position durable to vibration. Use this mode when returning the set to the customer after repair.

Procedure:

1. Press POWER button to turn the set ON.
2. Press PLAY button and POWER button simultaneously.
3. A message "LOCK" is displayed on the fluorescent indicator tube, and the CD delivery mode is set.

[MC Hot Reset]

- This mode resets the set with the preset data kept stored in the memory. The hot reset mode functions same as if the power cord is plugged in and out.

Procedure:

1. Press three buttons SPECTRUM ANALYZER , ENTER/NEXT , and DISC 2 simultaneously.
2. The fluorescent indicator tube becomes blank instantaneously, and the set is reset.

[Sled Servo Mode]

- This mode can run the CD sled motor freely. Use this mode, for instance, when cleaning the pickup.

Procedure:

1. Select the function "CD".
2. Press three buttons SPECTRUM ANALYZER , ENTER/NEXT , and FUNCTION simultaneously.
3. The Sled Servo mode is selected, if "CD" is blanking on the fluorescent indicator tube.
4. With the CD in stop status, press ▶▶ button in CD section to move the pickup to outside track, or ◀◀ button to inside track.
5. To exit from this mode, perform as follows:
   1) Move the pickup to the most inside track.
   2) Press three buttons in the same manner as step 2.

Note:

- Always move the pickup to most inside track when exiting from this mode. Otherwise, a disc will not be unloaded.
- Do not run the sled motor excessively, otherwise the gear can be chipped.

[Change-over of FUNCTION Name]

- The FUNCTION name of external input terminal can be changed over to VIDEO or MD.

Procedure:

1. Press POWER button to turn the set OFF.
2. Press POWER button together with FUNCTION button, and the power is turned on, the display of fluorescent indicator tube changes to "MD" or "VIDEO" instantaneously, and thus the FUNCTION is changed over.

[Change-over of AM Tuner Step between 9kHz and 10kHz]

- A step of AM channels can be changed over between 9kHz and 10kHz.

Procedure:

1. Press POWER button to turn the set ON.
2. Select the function "TUNER", and press TUNER/BAND button to select the BAND "AM".
3. Press POWER button to turn the set OFF.
4. Press ENTER/NEXT and POWER buttons simultaneously, and the display of fluorescent indicator tube changes to "AM 9k STEP" or "AM 10k STEP", and thus the channel step is changed over.

[LED and Fluorescent Indicator Tube All Lit, Key Check Mode]

Procedure:

1. Press three buttons SPECTRUM ANALYZER , ENTER/NEXT , and DISC 3 simultaneously.
2. LEDs and fluorescent indicator tube are all turned on. Press DISC 2 button, and the key check mode is activated.
3. In the key check mode, the fluorescent indicator tube displays "K 1 V0 J0". Each time a button is pressed, "K"value increases. However, once a button is pressed, it is no longer taken into account.
   "J" value increases like 1, 2, 3 ... if rotating JOG knob in "+" direction, or it decreases like 0, 9, 8 ... if rotating in "–" direction.
   "V" value increases like 1, 2, 3 ... if rotating VOLUME knob in "+" direction, or it decreases like 0, 9, 8 ... if rotating in "–" direction.
4. To exit from this mode, press three buttons in the same manner as step 1, or disconnect the power cord.

[Aging Mode]

This mode can be used for operation check of CD section and tape deck section.

- If an error occurred:
  The aging operation stops.
- If no error occurs:
  The aging operation continues repeatedly.

1. Aging Mode in CD Section

1-1. Operating Method of Aging Mode

1. Set discs in DISC1 and DISC2 trays.
2. Select the function "CD".
3. Press three buttons SPECTRUM ANALYZER, ENTER/NEXT, and KARAOKE PON/MPX simultaneously.
4. The aging mode is activated, if a roulette mark on the fluorescent indicator tube is blinking.
5. In the aging mode, the aging is executed in a sequence given in "1-2. Operation during Aging Mode".
   The aging continues unless an alarm occurred.
6. To exit from the aging mode, press POWER button to turn the set OFF.

- If a button other than buttons In CD section is pressed during aging, the aging in the CD section is finished.
- To execute aging to the tape deck section successively, press ▷ button in the deck A.
  "AGING" is displayed on the fluorescent indicator tube. (For the aging in tape deck, see "2. Aging Mode in Tape Deck Section".

1-2. Operation during aging Mode

In the aging mode, the program is executed in the following sequence.

1. The disc table is ejected.
2. The disc tray turns to select a disc. (For a disc selection sequence, see Section 1-3.)
3. TOC of disc is read.
4. The pickup accesses to the last track.
5. A disc is ejected.
6. Steps 2 through 5 are repeated.

1-3. Disc Selection Sequence

- During the aging mode, discs are selected in the following sequence:

$$\begin{tikzcd} \text{Disc 1} \arrow[r] & \text{Disc 2} \arrow[d] \\ \text{Disc 2} \arrow[u] & \text{Disc 1} \arrow[l] \end{tikzcd}$$

2. Aging Mode in Tape Deck Section

2-1. Operating Method of Aging Mode

1. Load a commercially available 10-minute tape into the decks A and B respectively.
   (If a 10-minute tape is not available, another tape may be used but a cycle time will be longer.)
2. Select the function "TAPE".
3. Rewind tapes in advance by pressing ◀◀ button respectively on decks A and B.
4. Press three buttons SPECTRUM ANALYZER, ENTER/NEXT, and KARAOKE PON/MPX simultaneously.
5. Press ▷ button on deck A. (This button triggers the aging mode.)
6. The aging mode is activated if "AGING A" is displayed on the fluorescent indicator tube.
7. In the aging mode, the aging is executed in a sequence given in "2-2. Operation during Aging Mode".
   The aging continues unless an alarm occurred.
8. To exit from the aging mode, press POWER button to turn the set OFF.

2-2. Operation during Aging Mode

In the aging mode, the program is executed in the following sequence.

1. A tape on FWD side is played for one minute.
2. PAUSE STOP is made.
3. Recording is made for 3 minutes. (For the deck not having the record function, the play is executed. In this case, ▷ LED does not light up.)
4. FF is executed up to the end of tape.
5. A tape is reversed, and the tape on REV side is played for one minute.
6. PAUSE STOP is made.
7. Recording is made for 3 minutes. (For the deck not having the record function, the play is executed. In this case, ◁ LED does not light up.)
8. FF is executed up to the end of tape.
9. Steps 1 through 8 are executed for the other deck.
10. Steps 1 through 9 are repeated unless an alarm occurred.

2-3. Deck Selection Sequence

- During the aging mode, decks are selected in the following sequence:

$$\begin{tikzcd} \text{Deck A (FWD)} \arrow[r] & \text{Deck A (REV)} \arrow[d] \\ \text{Deck B (REV)} \arrow[u] & \text{Deck B (FWD)} \arrow[l] \end{tikzcd}$$

SECTION 4
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers

2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

• Torque Measurement

Mode	Torque Meter	Meter Reading
Forward	CQ-102C	36 to 61g•cm (0.50 – 0.84 oz•inch)
Forward Back Tension	CQ-102C	2 to 6g•cm (0.026 – 0.082 oz•inch)
Reverse	CQ-102RC	36 to 61g•cm (0.50 – 0.84 oz•inch)
Reverse Back Tension	CQ-102RC	2 to 6g•cm (0.026 – 0.082 oz•inch)
FF, REW	CQ-201B	61 to 143g•cm (0.85 – 1.98 oz•inch)

• Tape Tension Measurement

Mode	Tension Meter	Meter Reading
Forward	CQ-403A	more than 100 g (3.53 oz)
Reverse	CQ-403R	more than 100 g (3.53 oz)

SECTION 5
ELECTRICAL ADJUSTMENTS

DECK SECTION   0 dB=0.775V

1. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjust.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
5. The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
6. The adjustments should be performed for both L-CH and R-ch.
7. Switches and controls should be set as follows unless otherwise specified.
8. Set to test mode. (Press key switch same time [SPECTRUM ANALYZER] [ENTER/NEXT] and [EFFECT ON/OFF] button.)

- Test Tape

Tape	Signal	Used for
P-4-A100	10 kHz, –10 dB	Azimuth Adjustment
WS-48B	3 kHz, 0dB	Tape Speed Adjustment
P-4-L300	315 Hz, 0dB	Level Adjustment

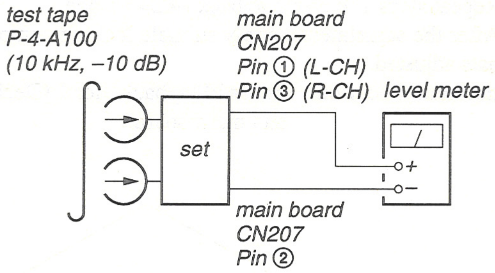
Record/Playback Head Azimuth Adjustment

DECK A   **DECK B**

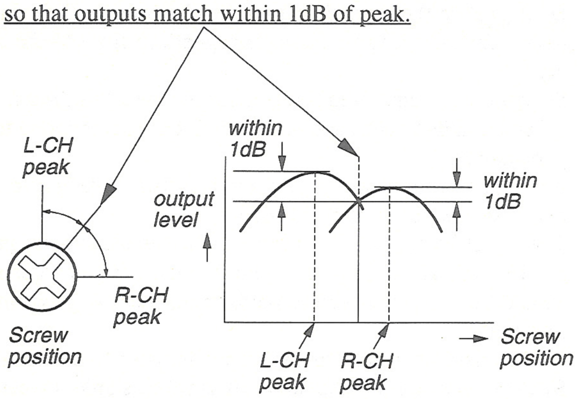
Note: Perform this adjustments for both decks

Procedure:

1. Mode: Playback (FWD)

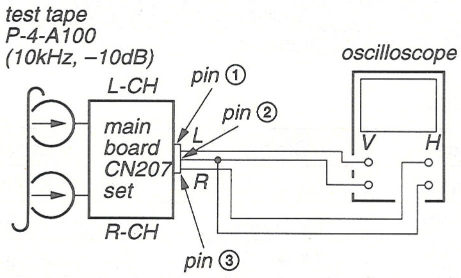


2. Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1dB of peak.

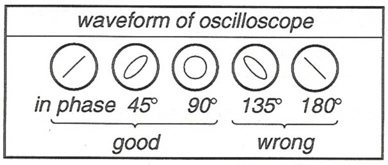


L-CH peak
within 1dB
output level
within 1dB
R-CH peak
Screw position
L-CH peak
R-CH peak
Screw position

3. Mode: Playback (FWD)



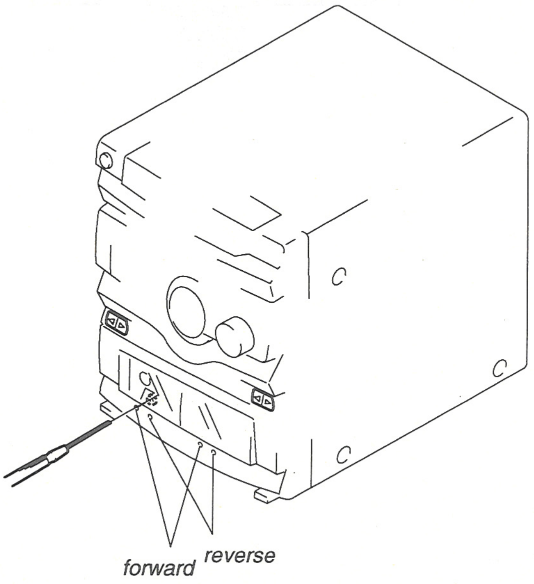
test tape
P-4-A100
(10kHz, –10dB)
L-CH
main board
CN207
set
R-CH
pin ①
pin ②
L
R
pin ③
oscilloscope
V
H



waveform of oscilloscope
in phase
45°
90°
135°
180°
good
wrong

4. Repeat steps 1 to 3 in playback (REV) mode.
5. After the adjustments, apply suitable locking compound to the pats adjusted.

Adjustment Location: Record/Playback Head (Deck A and B) and main board.



forward
reverse

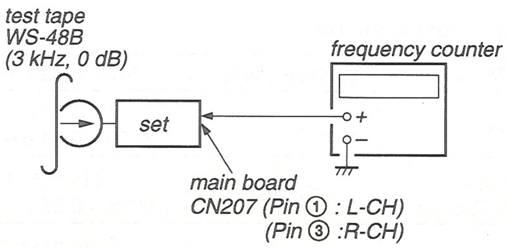
Tape Speed Adjustment DECK A

Note: Start the Tape Speed adjustment as below after setting to the test mode.
In the test mode, the tape speed is high during pressing the HIGH SPEED DUBBING button.

Procedure:

1. Turn the power switch on.
2. Press the SPECTRUM ANALYZER button, ENTER/NEXT button and EFFECT ON/OFF button simultaneously.
   To exit from the test mode, press the POWER button.

Mode: Playback (FWD)



test tape
WS-48B
(3 kHz, 0 dB)
set
frequency counter
+
–
main board
CN207 (Pin ① : L-CH)
(Pin ③ :R-CH)

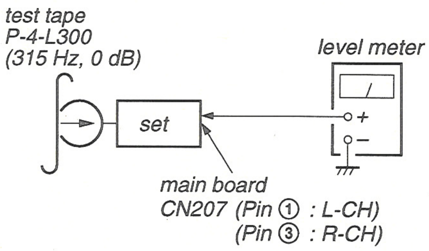
1. Insert the WS-48B into the deck A and the blank tape into the deck B.
2. Press the REC button and ▷ button on the deck B. Then the deck B is at recording mode.
3. Set the deck A to playback mode.
4. Keep pressing the HIGH SPEED DUBBING button in playback mode.
   Then at HIGH speed mode.
5. Adjust RV652 on the AUDIO board do that frequency counter reads 6,000 ± 60 Hz.
6. Take off the HIGH SPEED DUBBING button.
   Then at NORMAL speed mode.
7. Adjust RV651 on the AUDIO board so that frequency counter reads $3{,}000^{+30}_{-10}$ Hz.
8. Frequency difference between deck A and deck B the beginning of the tape should be within ± 1.5 %.

Adjustment Location: AUDIO board

Playback level Adjustment DECK A DECK B

Procedure:

Mode: Playback (FWD)



test tape
P-4-L300
(315 Hz, 0 dB)
set
level meter
+
–
main board
CN207 (Pin ① : L-CH)
(Pin ③ : R-CH)

Deck A is RV311 (L-CH) and RV411 (R-CH), Deck B is RV301 (L-CH) and RV401 (R-CH) so that adjustment within adjustment level as follows.

Adjustment Level:

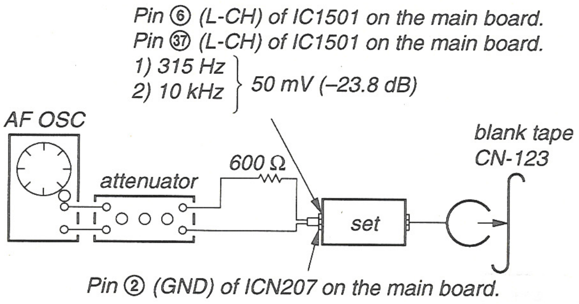
CN207 PB level: 301.5 to 338.3 mV (–8.2 to –7.2 dB) level difference between the channels: within ±0.5 dB

Adjustment Location: AUDIO and main boards

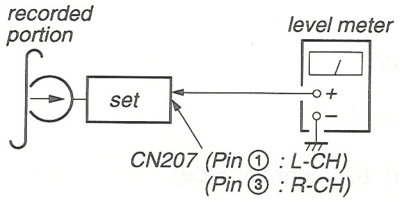
Record bias Current Adjustment DECK B

Procedure:

1. Mode: record


Pin ⑥ (L-CH) of IC1501 on the main board.
Pin ㊲ (L-CH) of IC1501 on the main board.
1) 315 Hz
2) 10 kHz
50 mV (–23.8 dB)
AF OSC
attenuator
600 Ω
set
blank tape
CN-123
Pin ② (GND) of ICN207 on the main board.

2. Mode: Playback

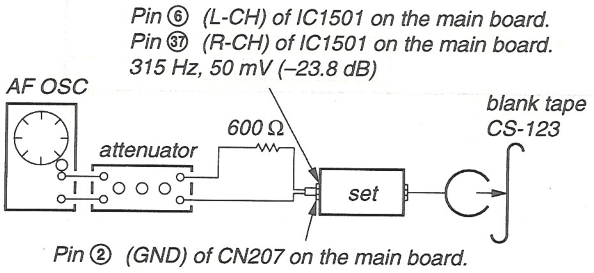

recorded
portion
set
level meter
+
–
CN207 (Pin ① : L-CH)
(Pin ③ : R-CH)

Confirm playback the signal recorded in step 1 become adjustable limits as follows.
If these levels do not adjustable limits, adjustment the RV341 (L-CH) and RV441 (R-CH) on the AUDIO board to repeat steps 1 and 2.
Adjustable limits: Playback output of 315 Hz to playback output of 10 kHz: ±0.5 dB
Adjustment Location: AUDIO and main boards

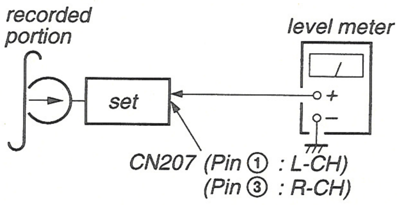
Record Level Adjustment DECK B

Procedure:

1. Mode: record


Pin ⑥ (L-CH) of IC1501 on the main board.
Pin ㊲ (R-CH) of IC1501 on the main board.
315 Hz, 50 mV (–23.8 dB)
AF OSC
attenuator
600 Ω
set
blank tape
CS-123
Pin ② (GND) of CN207 on the main board.

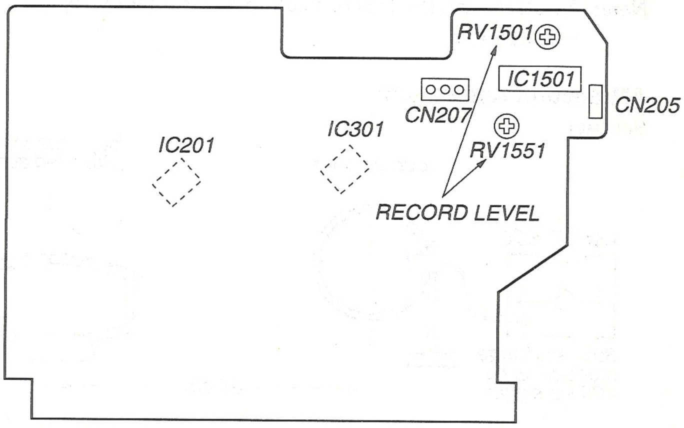
2. Mode: Playback


recorded
portion
set
level meter
+
–
CN207 (Pin ① : L-CH)
(Pin ③ : R-CH)

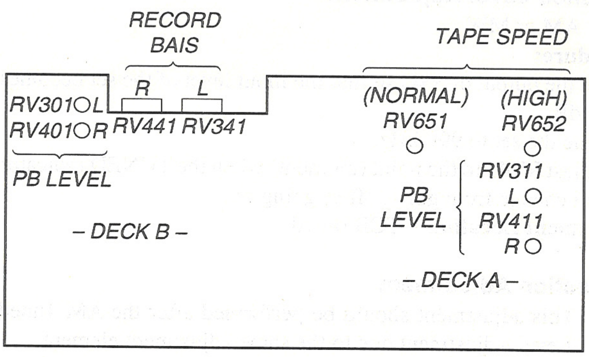
Confirm playback the signal recorded in step 1 become adjustable limits as follows.
If these levels do not adjustable limits, adjustment the RV1501 (L-CH) and RV1551 (R-CH) on the main board to repeat steps 1 and 2.
Adjustable limits:
CN207 PB level: 47.3 to 53.1 mV (–24.3 to –23.3 dB)

Adjustment Location: main board

[MAIN BOARD] (Component Side)


RV1501
IC1501
CN205
CN207
RV1551
IC201
IC301
RECORD LEVEL

[AUDIO BOARD] (Conductor Side)


RECORD
BAIS
R
L
RV301 L
RV401 R
RV441 RV341
PB LEVEL
– DECK B –
TAPE SPEED
(NORMAL)
RV651
(HIGH)
RV652
PB
LEVEL
RV311
L
RV411
R
– DECK A –

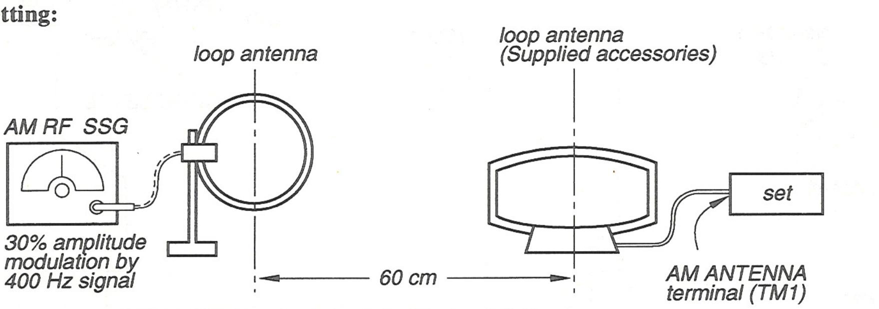
TUNER SECTION 0 dB=1 μV

(GR8: Tourist/RX90 only)

Note: As a front-end (FE1) is difficult to repair if faulty, replace it with new one.

AM Section Adjustment

Setting:



loop antenna
loop antenna
(Supplied accessories)
AM RF SSG
set
30% amplitude modulation by 400 Hz signal
60 cm
AM ANTENNA terminal (TM1)

Field strength dB (μ V/m) =SSG output level dB (μ V/m) –26 dB.

AM Tuned Level Adjustment

Band: AM or MW

Procedure:

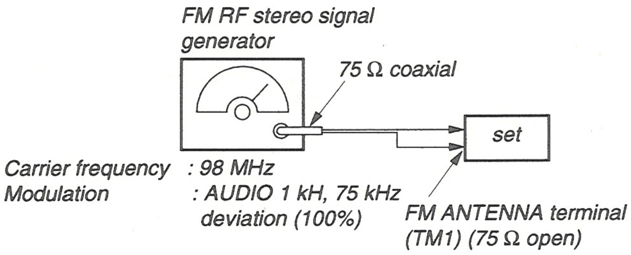
1. Set the output of SSG so that the input level of the set becomes 55 dB.
2. Tune the set to 999 kHz.
3. Adjust RV41 to the point (moment) when the TUNED indicator will change from going off to going on.

Adjustment Location : TCB board

FM Section Adjustment

Note: This adjustment should be performed after the AM Tuned Level Adjustment due to the same adjustment element.

Setting:



FM RF stereo signal generator
75 Ω coaxial
set
Carrier frequency : 98 MHz
Modulation : AUDIO 1 kH, 75 kHz deviation (100%)
FM ANTENNA terminal (TM1) (75 Ω open)

FM Tuned Level Adjustment

Band: FM

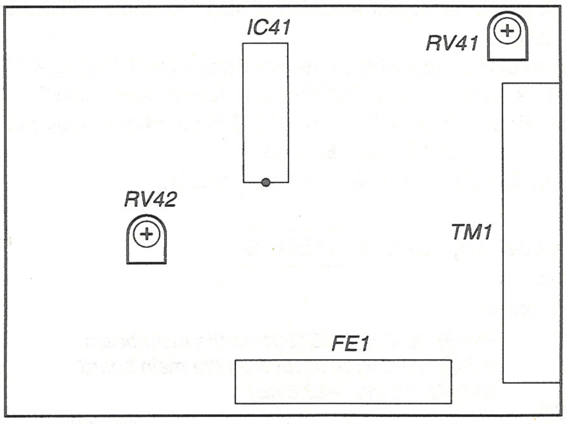
Procedure:

1. Supply a 25 dBμ 98 MHz signal from the ANTENNA terminal.
2. Tune the set to 98 MHz.
3. If the TUNED indicator does not light, adjust RV42 to the point (moment) when the TUNED indicator will change from going off to going on.

Adjustment Location: TCB board

Adjustment Location:

[TCB BOARD] (Component Side)



IC41
RV41
RV42
TM1
FE1

SW OSC Voltage Adjustment (GR8: Tourist only)

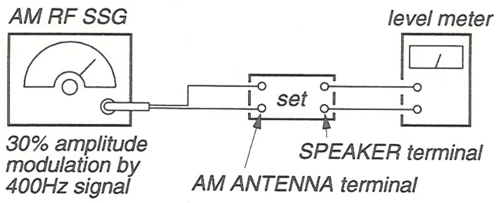
Setting:
Band: SW

Procedure:
1. Connect digital Voltmeter to diode D1 center lead and ground.
2. Adjust for a following value reading on digital voltmeter.

	frequency Adjustment	part Reading on	digital voltmeter
SW	5.95 MHz	T2	1.2 ± 0.1 V
	17.9 MHz	CV2	8.5 ± 0.2 V

SW Tracking Adjustment (GR8: Tourist only)

Setting:
Band: SW


AM RF SSG
level meter
set
30% amplitude modulation by 400Hz signal
SPEAKER terminal
AM ANTENNA terminal

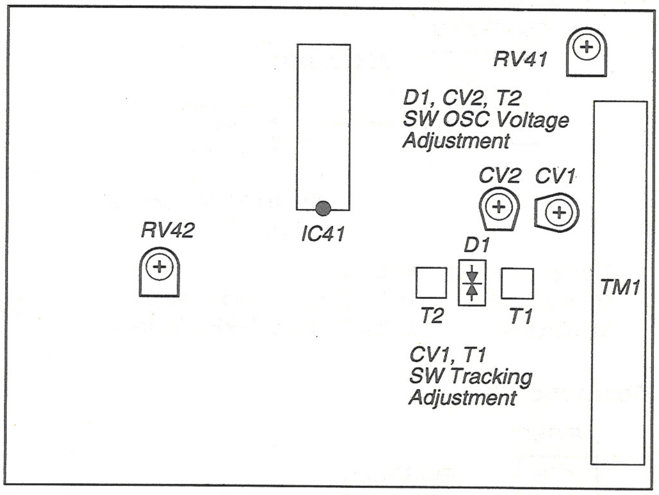
Procedure:
Adjust for maximum reading on level meter.

	Set frequency Adjustment	part
SW	7 MHz	T1
	17 MHz	CV1

- Repeat the procedures is each adjustment several times, and the frequency coverage and tracking adjustment should be finally done by the trimmer capacitors.

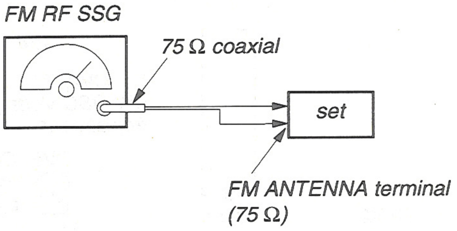
Adjustment Location:

[TCB BOARD] (Component Side)


RV41
D1, CV2, T2
SW OSC Voltage
Adjustment
CV2
CV1
RV42
IC41
D1
T2
T1
TM1
CV1, T1
SW Tracking
Adjustment

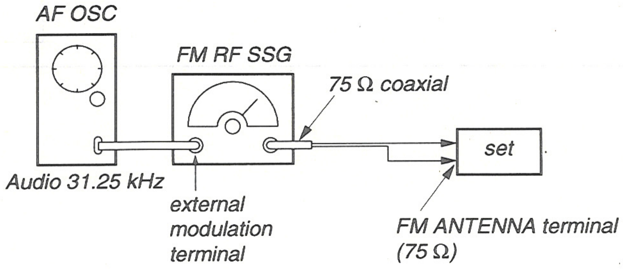
FM Polar Adjustment (RX90: EE, CIS only)

Connection 1:


FM RF SSG
75 Ω coaxial
set
FM ANTENNA terminal
(75 Ω)

Carrier frequency : 69 MHz
Output level : 1mV (60dBμ) (at 75 Ω open)
Modulation : AUDIO 1 kHZ, 10kHz deviation

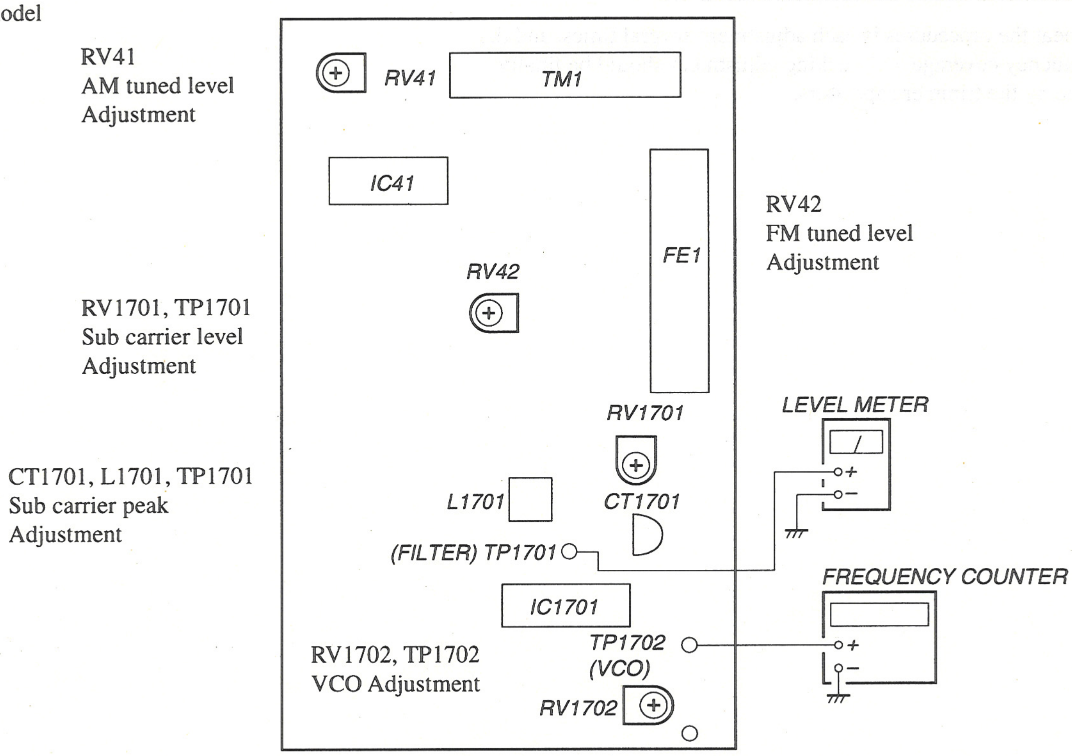
Connection 2:


AF OSC
FM RF SSG
75 Ω coaxial
set
Audio 31.25 kHz
external
modulation
terminal
FM ANTENNA terminal
(75 Ω)

Carrier frequency : 69 MHz
Output level : 1mV (60 dBμ) (at 75 Ω open)
Modulation : AUDIO 31.25 kHZ, 10 kHz deviation
(EXTERNAL MODULATION)

Adjustment Location :
EE, CIS:
[TCB BOARD] (Component Side)

- Abbreviation
  EE: East European model


RV41
TM1
IC41
FE1
RV42
RV1701
L1701
CT1701
(FILTER) TP1701
LEVEL METER
FREQUENCY COUNTER
IC1701
TP1702
(VCO)
RV1702

RV41
AM tuned level
Adjustment

RV42
FM tuned level
Adjustment

RV1701, TP1701
Sub carrier level
Adjustment

CT1701, L1701, TP1701
Sub carrier peak
Adjustment

RV1702, TP1702
VCO Adjustment

Procedure :

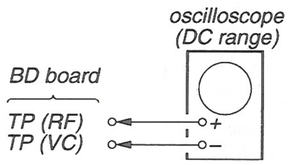
1. Set the modulation of FM RF SSG to AUDIO 1 kHz, 10 kHz deviation according to "Connection 1".
2. Tune the set to 69 MHZ.
3. Adjust the RV1702 so that the reading of frequency counter connected to TP1702 becomes within 31.25 kHz ± 0.05 kHz.(VCO adjustment)
4. Then record the reading of the level meter connected to TP1701
5. Set the modulation of FM RF SSG to AUDIO 31.25 kHz, 10 kHz deviation according to "Connection 2".
6. Tune the set to 69 MHz.
7. Set the CT1701 to be mechanical center.
8. Adjust the L1701 so that the reading of the level meter connected to TP1701 become maximum.
   Then adjust the CT1701 so that the reading of the level meter connected to TP1701 becomes maximum. (SUB CARRIER PEAK Adjustment)
9. Adjust the RV1701 so that the level at the moment becomes 14dB higher value than the level recorded in step 4. (SUB CARRIER LEVEL Adjustment)

CD SECTION

Note:

1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10M impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.
5. Adjust the focus bias adjustment when optical block is replaced.

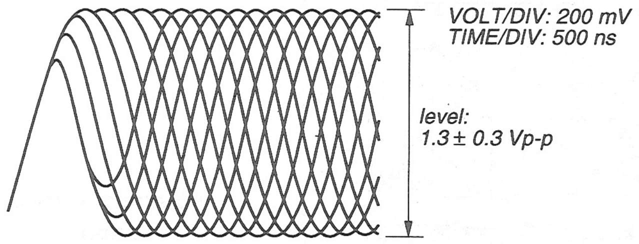
Focus Bias check



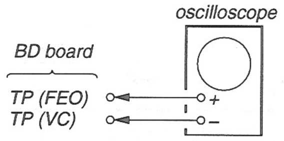
Procedure:

1. Connect oscilloscope to test point TP (RF). (GND terminal : VC)
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that the shape "◇" can be clearly distinguished at the center of the waveform and check the RF signal level.

- **RF signal**



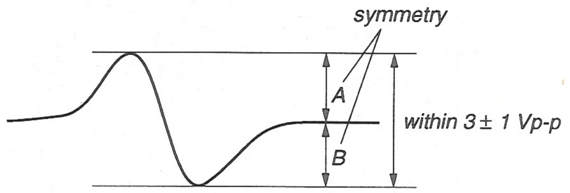
S Curve Check



Procedure:

1. Connect oscilloscope to test point TP (FEO).
2. Connect between test point TP (FOK) and GND by lead wire.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and turned Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 3±1 Vp-p.

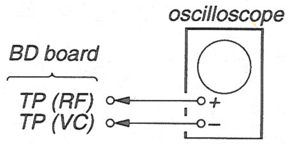
S-curve waveform



6. After check, remove the lead wire connected in step 2.

Note:
- Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
- Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check



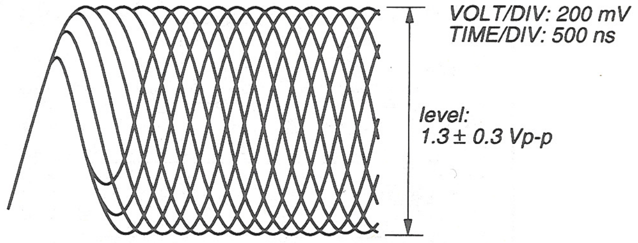
Procedure:

1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

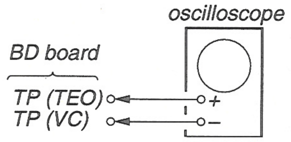
Note:

Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

- **RF signal**



E-F Balance (1 Track Jump) check (Without remote commander)

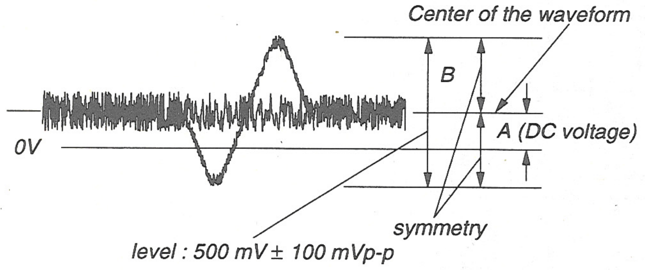


Procedure:

1. Connect oscilloscope to test point TP (TEO) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in to play the number five track.
4. Press the "❚❚ (Pause)" button. (Becomes the 1 track jump mode)
5. Check the level B of the oscilloscope's waveform and the A (DC voltage) of the center of the Traverse waveform.
   Confirm the following:

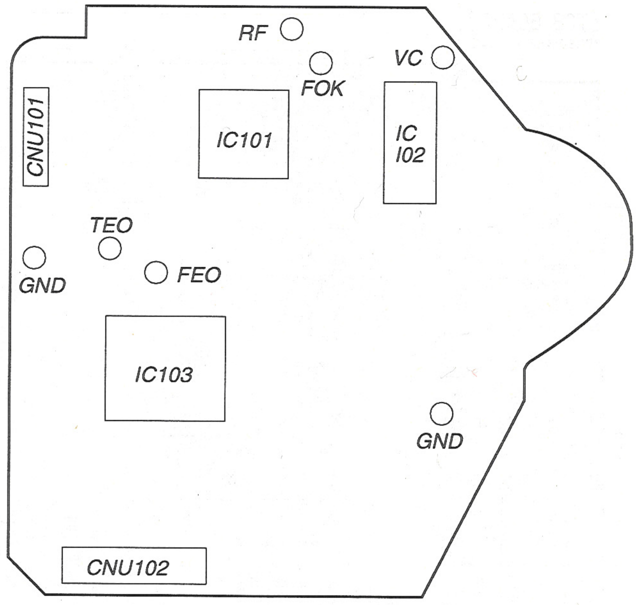
$$\frac{A-B}{2\,(A+B)} \times 100 = \pm 7\ (\%)$$

1 track jump waveform



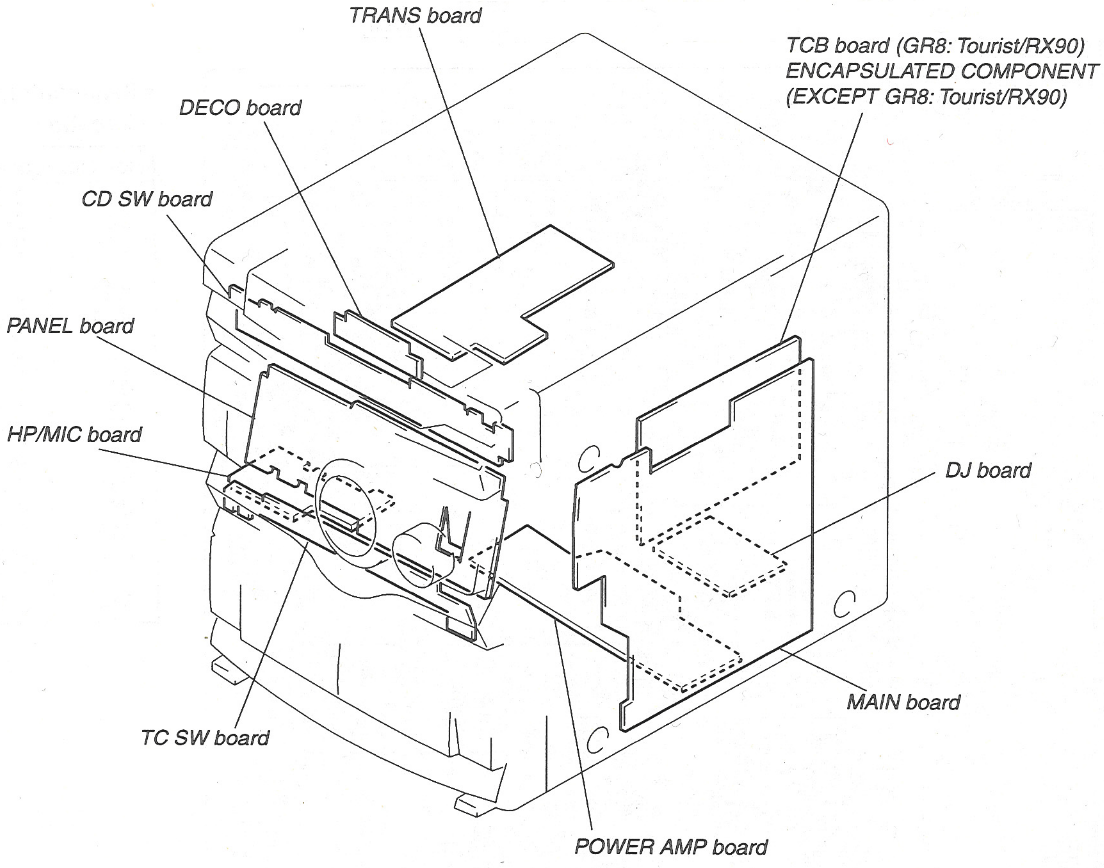
Adjustment Location:

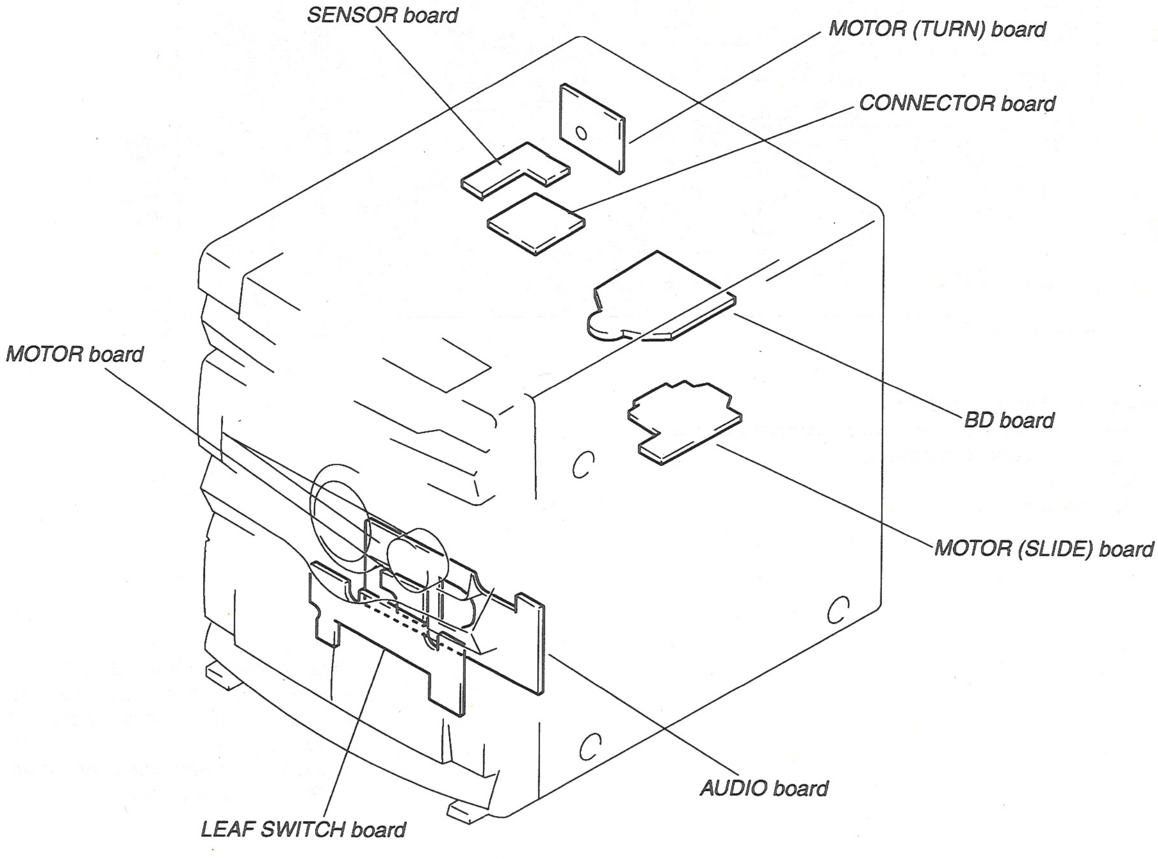
[BD BOARD] (Conductor Side)



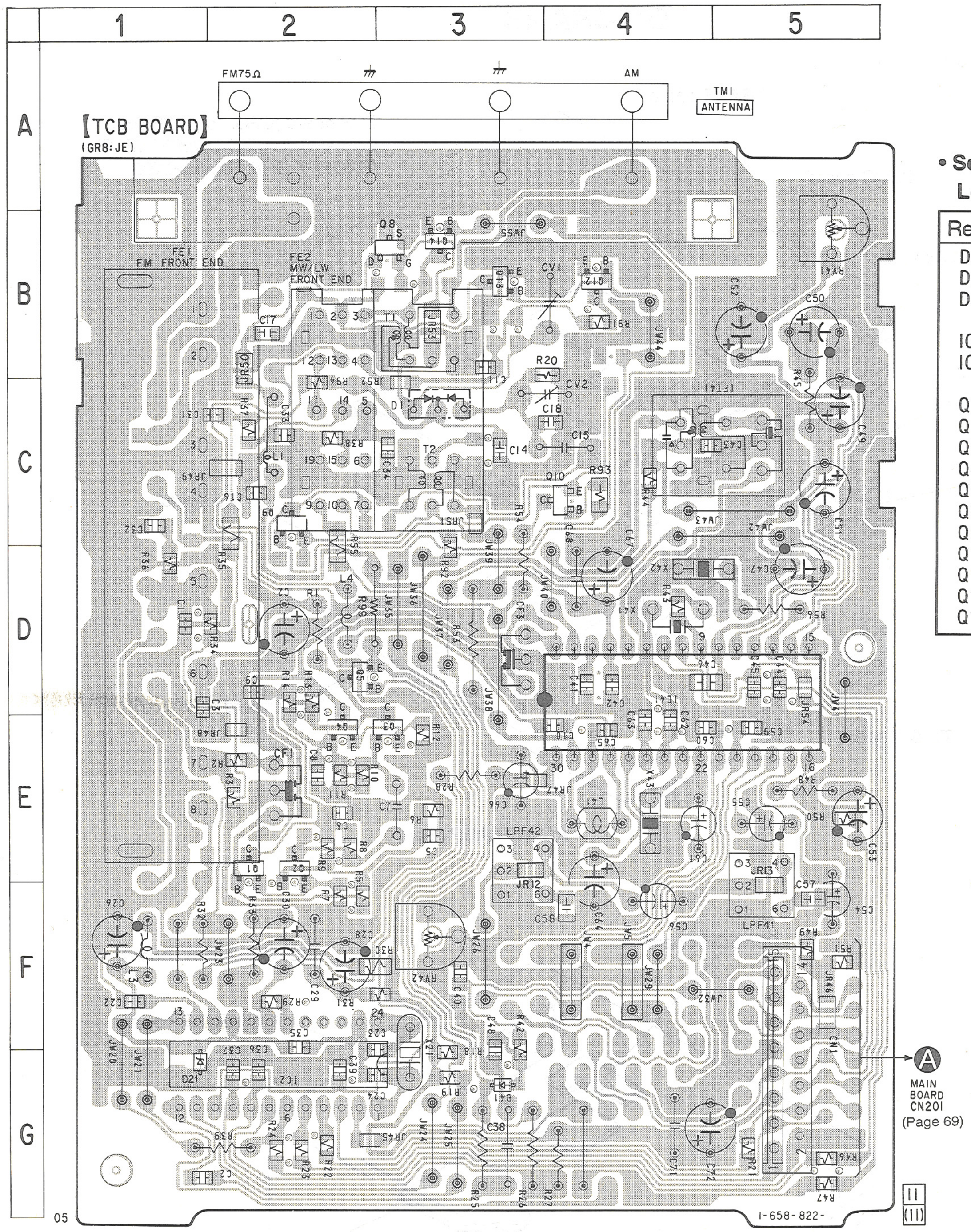
SECTION 6
DIAGRAMS

- **Circuit Boards Location**


TRANS board
TCB board (GR8: Tourist/RX90)
ENCAPSULATED COMPONENT
(EXCEPT GR8: Tourist/RX90)
DECO board
CD SW board
PANEL board
HP/MIC board
DJ board
MAIN board
TC SW board
POWER AMP board


SENSOR board
MOTOR (TURN) board
CONNECTOR board
MOTOR board
BD board
MOTOR (SLIDE) board
AUDIO board
LEAF SWITCH board

6-1. PRINTED WIRING BOARD – TUNER Section – (GR8: Tourist)


1
2
3
4
5
A
B
C
D
E
F
G
【TCB BOARD】
(GR8:JE)
FM75Ω
AM
TM1
ANTENNA
FE1
FM FRONT END
FE2
MW/LW
FRONT END
IC21
IC41
LPF41
LPF42
MAIN
BOARD
CN201
(Page 69)
1-658-822-
05

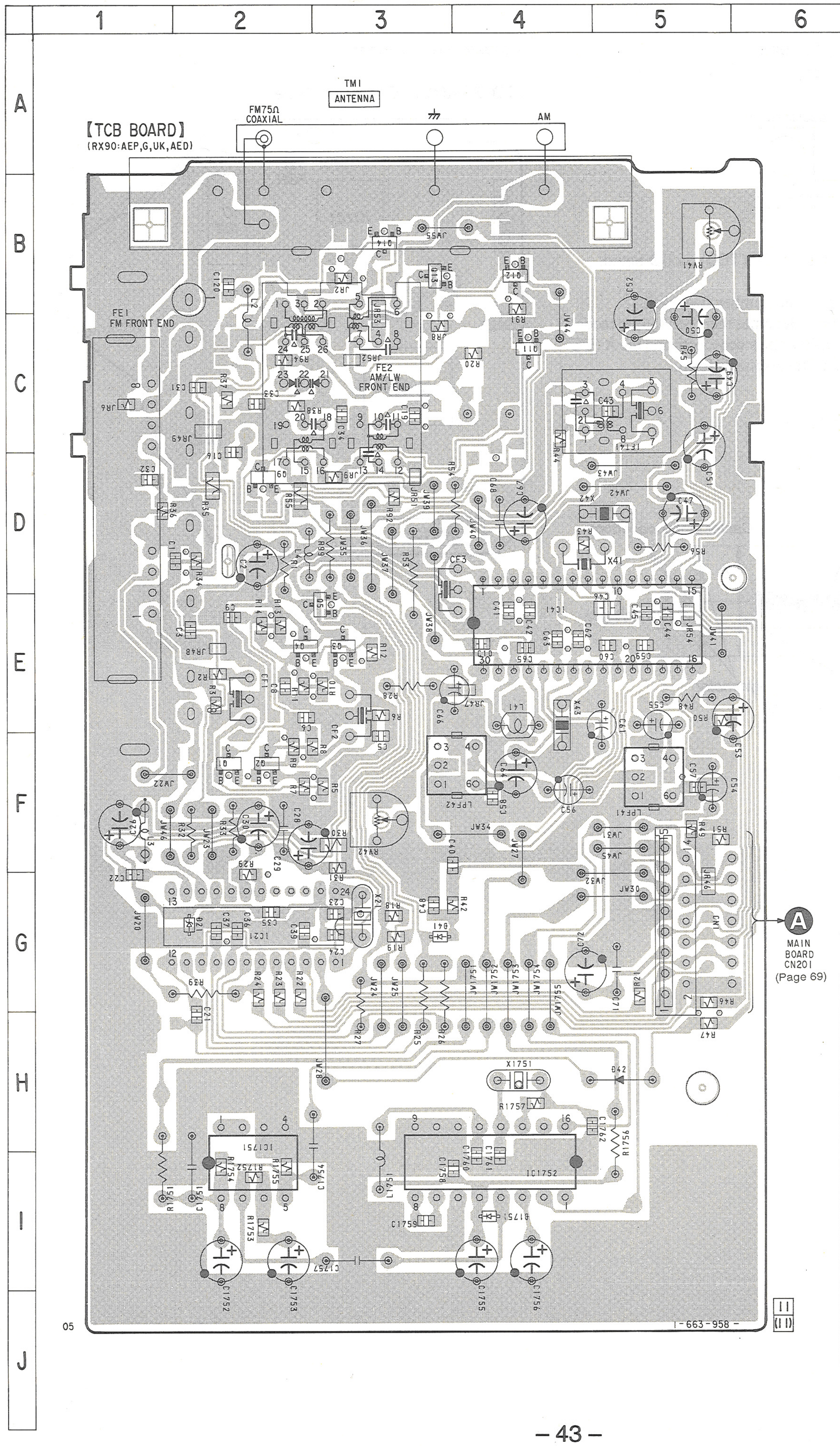
- **Semiconductor Location**

Ref. No.	Location
D1	C-3
D21	G-1
D41	G-3
IC21	G-2
IC41	D-4
Q1	E-2
Q2	E-2
Q3	E-3
Q4	E-2
Q5	D-2
Q8	B-3
Q9	C-2
Q10	C-4
Q12	B-4
Q13	B-3
Q14	B-3

Note on Printed Wiring Board:

- ○—— : parts extracted from the component side.
- △ : internal component.
- Abbreviation
  JE : Tourist model

(RX90: AEP, German, UK, Northern European)


1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
J
【TCB BOARD】
(RX90:AEP,G,UK,AED)
FM75Ω
COAXIAL
TM1
ANTENNA
AM
FE1
FM FRONT END
FE2
AM/LW
FRONT END
IC21
IC41
IC1751
IC1752
X1751
LPF41
LPF42
MAIN
BOARD
CN201
(Page 69)
1-663-958-
05

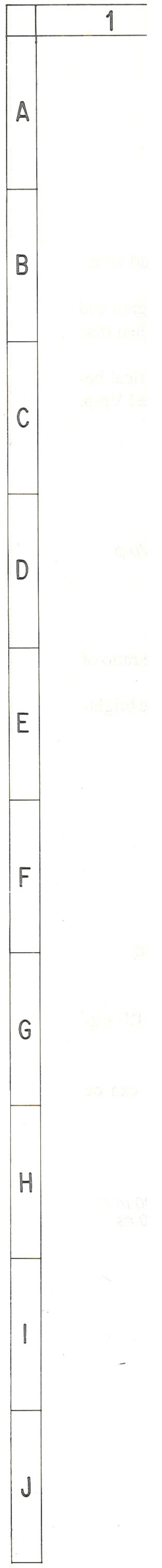
- **Semiconductor Location**

Ref. No.	Location
D21	G-2
D41	G-3
D42	H-5
D1751	I-4
IC21	G-2
IC41	E-4
IC1751	I-2
IC1752	I-4
Q1	F-2
Q2	F-2
Q3	E-3
Q4	E-2
Q5	E-3
Q9	D-2
Q11	C-4
Q12	B-4
Q13	B-3
Q14	B-3

Note on Printed Wiring Board:

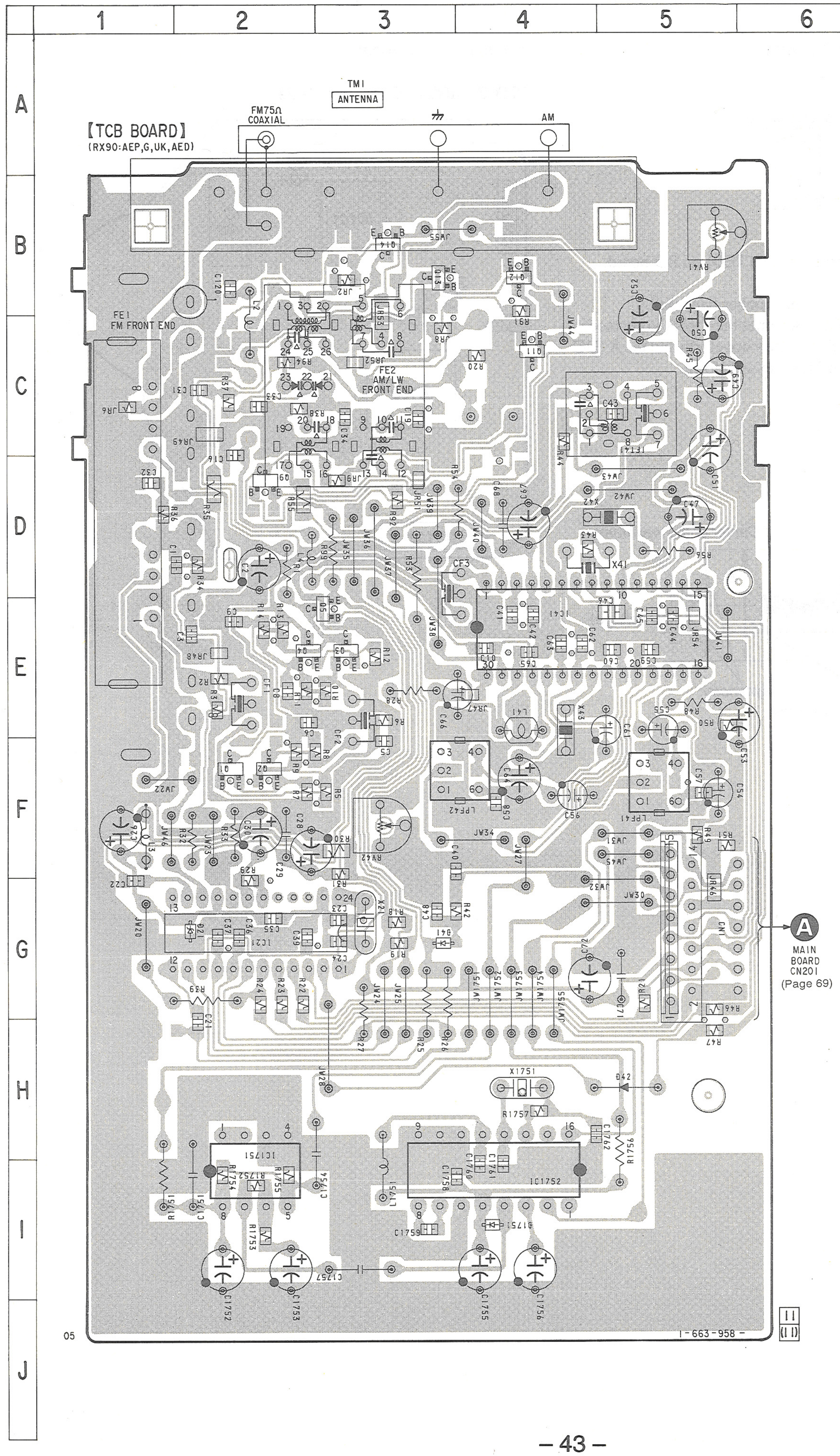
- ○—— : parts extracted from the component side.
- △ : internal component.
- Abbreviation
  AED : Northern European model
  G : Geman model

(RX90: East E


1
A
B
C
D
E
F
G
H
I
J

t side.

(RX90: AEP, German, UK, Northern European)



1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
J
【TCB BOARD】
(RX90:AEP,G,UK,AED)
TM1
ANTENNA
FM75Ω
COAXIAL
AM
FE1
FM FRONT END
FE2
AM/LW
FRONT END
IC41
IC21
IC1751
IC1752
X1751
A
MAIN
BOARD
CN201
(Page 69)
05
1-663-958-
11
(11)

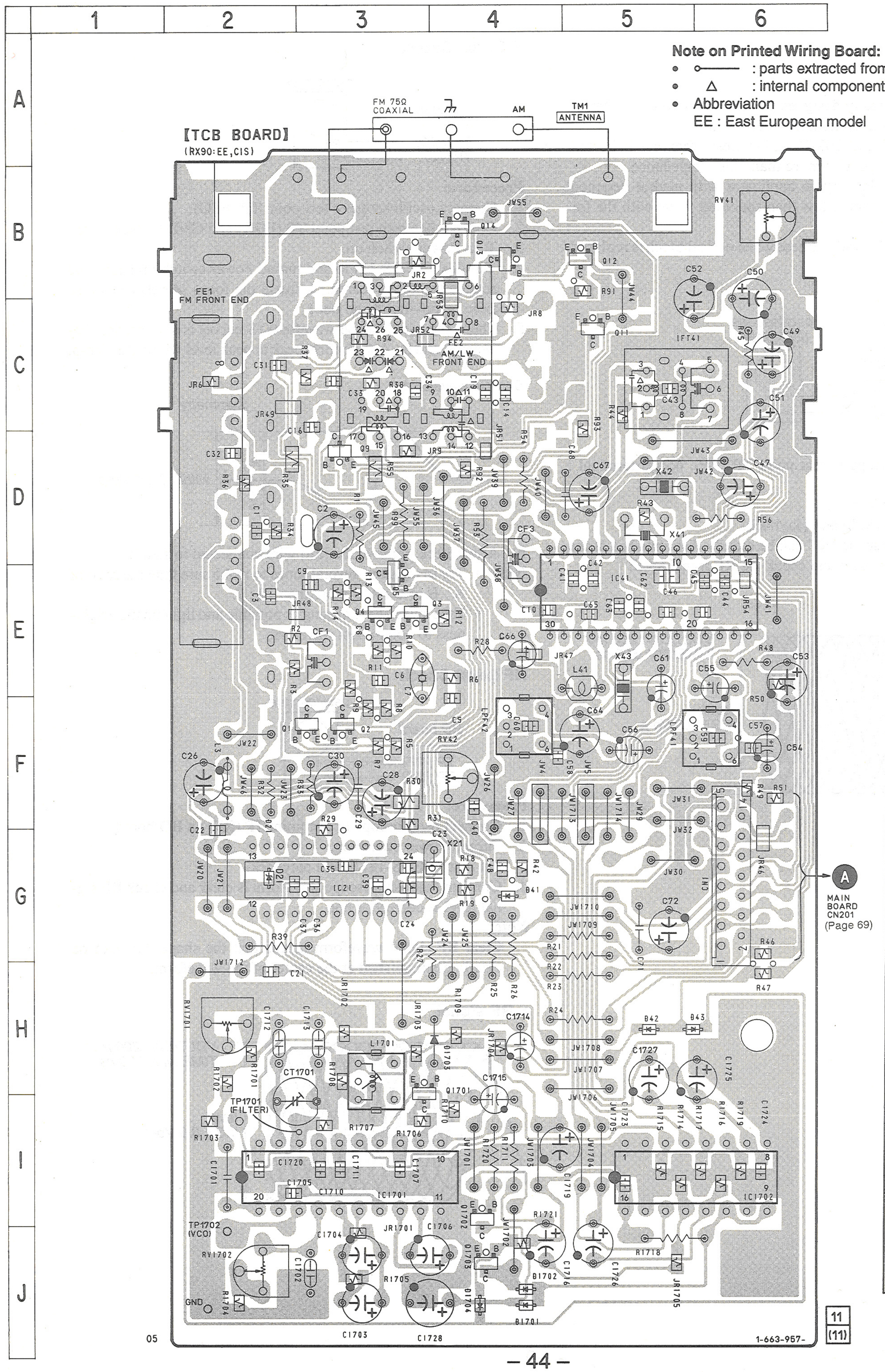
• **Semiconductor Location**

Ref. No.	Location
D21	G-2
D41	G-3
D42	H-5
D1751	I-4
IC21	G-2
IC41	E-4
IC1751	I-2
IC1752	I-4
Q1	F-2
Q2	F-2
Q3	E-3
Q4	E-2
Q5	E-3
Q9	D-2
Q11	C-4
Q12	B-4
Q13	B-3
Q14	B-3

(RX90: East European, CIS)

Note on Printed Wiring Board:

- ○—— : parts extracted from the component side.
- △ : internal component.
- Abbreviation
  EE : East European model



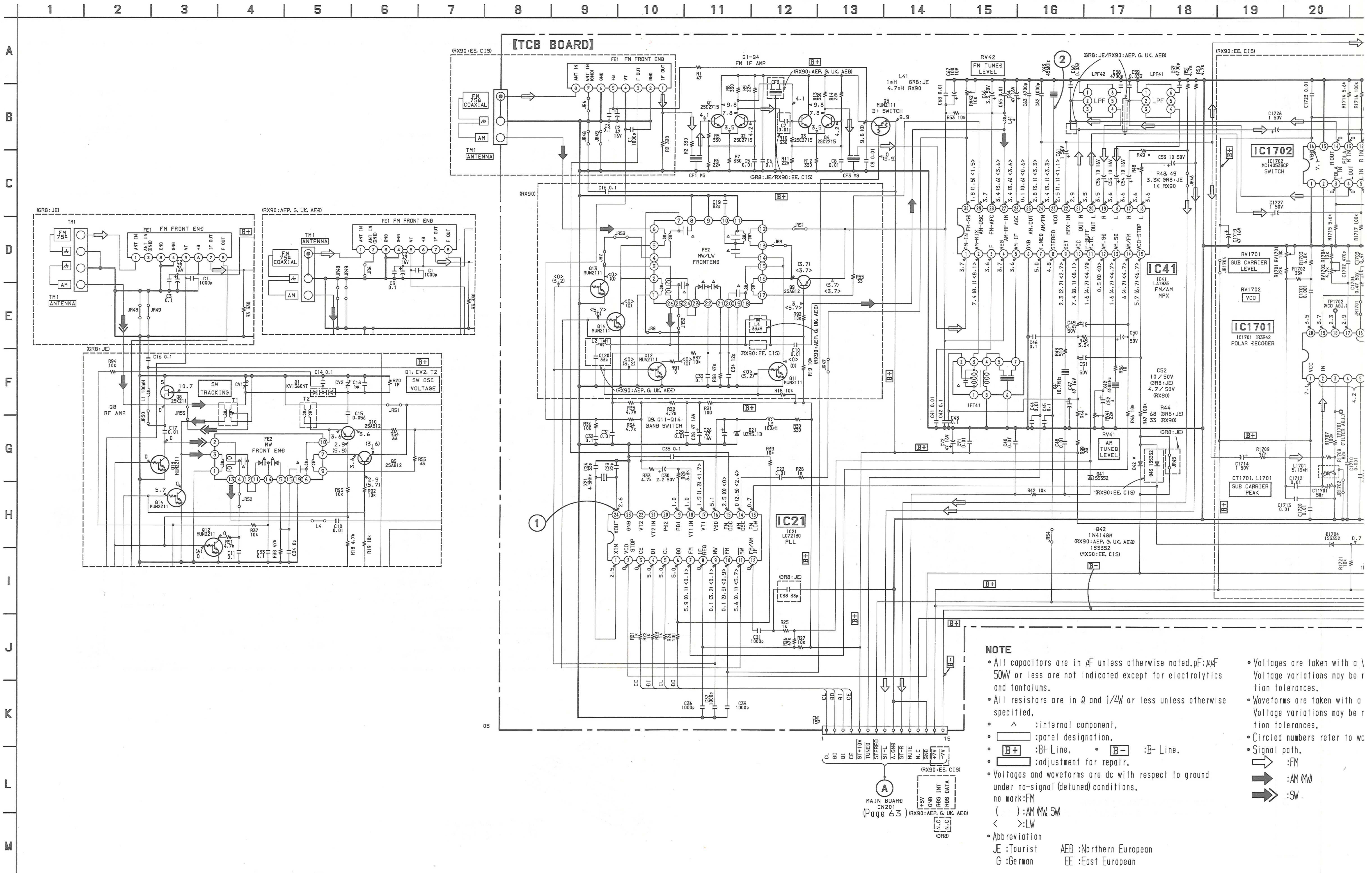
1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
J
【TCB BOARD】
(RX90:EE,CIS)
FM 75Ω
COAXIAL
AM
TM1
ANTENNA
FE1
FM FRONT END
FE2
AM/LW
FRONT END
IC41
IC21
IC1701
IC1702
CT1701
TP1701
(FILTER)
TP1702
(VCO)
RV1702
GND
A
MAIN
BOARD
CN201
(Page 69)
05
1-663-957-
11
(11)

• **Semiconductor Location**

Ref. No.	Location
D21	G-2
D41	G-4
D42	H-5
D43	H-5
D1701	J-4
D1702	J-4
D1703	H-4
D1704	J-4
IC21	G-3
IC41	E-5
IC1701	I-3
IC1702	I-6
Q1	F-3
Q2	F-3
Q3	E-3
Q4	E-3
Q5	E-3
Q9	D-3
Q11	C-5
Q12	B-5
Q13	B-4
Q14	B-4
Q1701	I-3
Q1702	I-4
Q1703	J-4

6-2. SCHEMATIC DIAGRAM – TUNER Section – (GR8: Tourist/RX90)

• See page 82 for IC Block Diagrams.

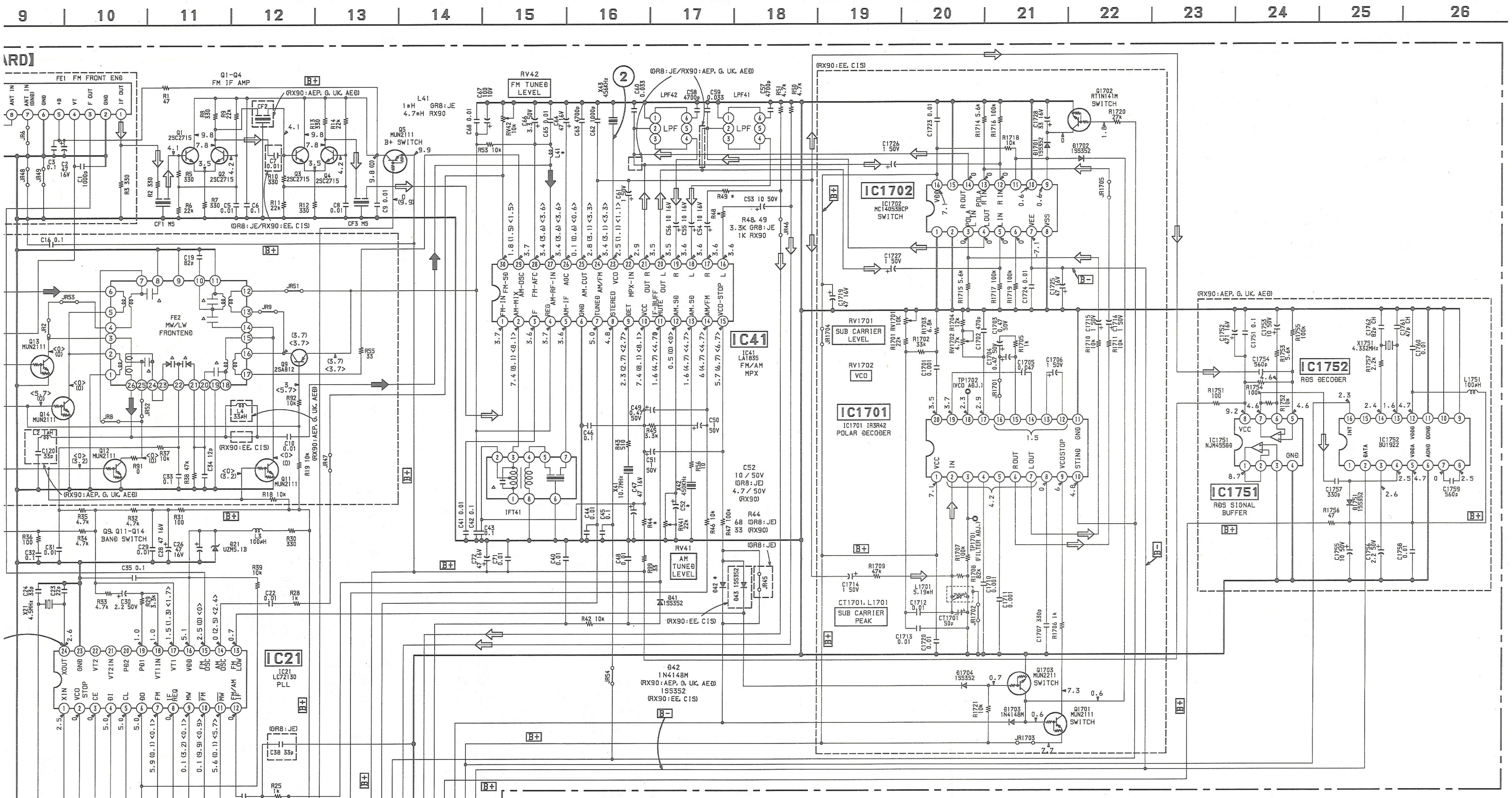


[TCB BOARD]
TM1 ANTENNA
FM 75Ω COAXIAL
AM
FE1 FM FRONT END
Q1-Q4 FM IF AMP
CF2
L41 1mH GR8:JE 4.7mH RX90
Q5 MUN2111 B+ SWITCH
RV42 FM TUNED LEVEL
LPF42
LPF41
IC1702 MC14053BCP SWITCH
FE2 MW/LW FRONTEND
Q9 2SA812
Q13 MUN2111
Q14 MUN2111
Q12 MUN2111
Q11 MUN2111
Q9, Q11-Q14 BAND SWITCH
IC41 LA1835 FM/AM MPX
IFT41
RV41 AM TUNED LEVEL
D41 1SS352
D42 1N4148M (RX90:AEP, G, UK, AED) 1SS352 (RX90:EE, CIS)
IC21 LC72130 PLL
X21 4.5MHz
D21 UZM5.1B
RV1701 SUB CARRIER LEVEL
RV1702 VCO
IC1701 IR3R42 POLAR DECODER
CT1701, L1701 SUB CARRIER PEAK
TP1702 (VCO ADJ.)
TP1701 (FILTER ADJ.)
D1704 1SS352
Q8 RF AMP
Q8 2SK211
SW TRACKING
D1 KV1560NT
D1, CV2, T2 SW OSC VOLTAGE
Q10 2SA812
FE2 MW FRONT END
CN1 15P
A
MAIN BOARD CN201 (Page 63)
(GR8:JE)
(RX90:AEP, G, UK, AED)
(RX90:EE, CIS)
(RX90)

NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ :internal component.
- ▭ :panel designation.
- B+ :B+ Line. • B− :B− Line.
- ▭ :adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark:FM
  ( ) :AM (MW, SW)
  < >:LW
- Abbreviation
  JE :Tourist AED :Northern European
  G :German EE :East European

- Voltages are taken with a
  Voltage variations may be
  tion tolerances.
- Waveforms are taken with a
  Voltage variations may be
  tion tolerances.
- Circled numbers refer to w
- Signal path.
  ⇨ :FM
  ➡ :AM (MW)
  ➡≫ :SW

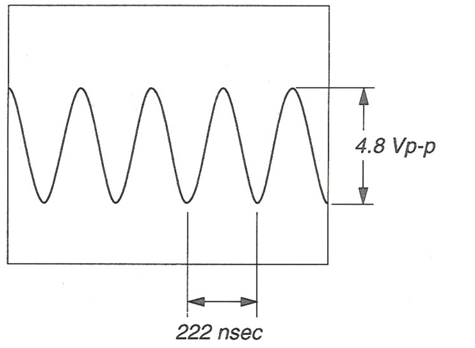

9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
FE1 FM FRONT END
Q1-Q4 FM IF AMP
(RX90:AEP, G, UK, AED)
(GR8:JE/RX90:EE, CIS)
L41 1mH GR8:JE 4.7mH RX90
Q5 MUN2111 B+ SWITCH
RV42 FM TUNED LEVEL
(GR8:JE/RX90:AEP, G, UK, AED)
LPF42
LPF41
LPF
FE2 MW/LW FRONTEND
Q13 MUN2111
Q14 MUN2111
Q12 MUN2111
Q11 MUN2111
Q9 2SA812
L4 33μH
(RX90:EE, CIS)
(RX90:AEP, G, UK, AED)
IC41 LA1835 FM/AM MPX
IFT41
RV41 AM TUNED LEVEL
R44 68 (GR8:JE) 33 (RX90)
CS2 10/50V (GR8:JE) 4.7/50V (RX90)
R48, 49 3.3K GR8:JE 1K RX90
Q9, Q11-Q14 BAND SWITCH
IC21 LC72130 PLL
D41 1SS352
D42 1N4148M (RX90:AEP, G, UK, AED) 1SS352 (RX90:EE, CIS)
(GR8:JE)
(RX90:EE, CIS)
IC1702 MC14053BCP SWITCH
IC1701 IR3R42 POLAR DECODER
RV1701 SUB CARRIER LEVEL
RV1702 VCO
CT1701, L1701 SUB CARRIER PEAK
Q1702 RT1N141M SWITCH
Q1703 MUN2211 SWITCH
Q1701 MUN2111 SWITCH
IC1752 RDS DECODER
IC1751 NJM4558D
IC1751 RDS SIGNAL BUFFER
X1751 4.332MHz
L1751 100μH
CN1 15P
CL
DO
DI
CE
ST+10V
TUNED
STEREO
ST-L
A.GND
ST-R
MUTE
N.C
GND
-7V
+5V
RDS INT
RDS DATA
N.C
(GR8)
MAIN BOARD CN201 (Page 63)
B+
B-

NOTE

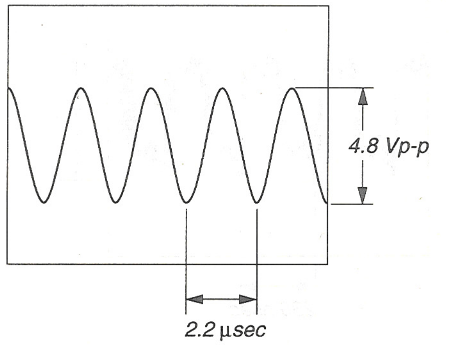
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.
- B+ : B+ Line. • B- : B- Line.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark: FM
  ( ) : AM (MW, SW)
  < > : LW
- Abbreviation
  JE : Tourist AED : Northern European
  G : German EE : East European
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM
  ➡ : AM (MW)
  ➡» : SW

• Waveforms

① IC21 ㉔ pin (X OUT)

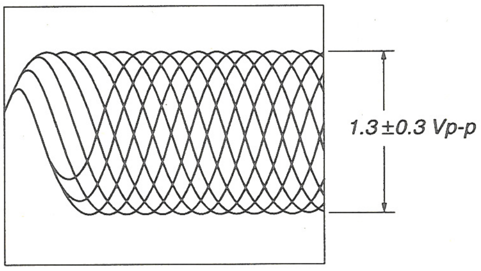


② IC41 ㉓ pin VCO

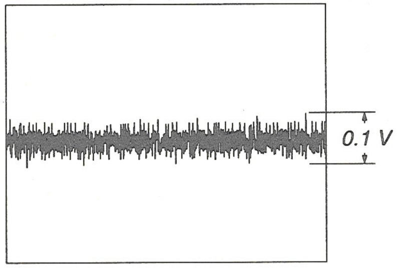


• **Waveforms**

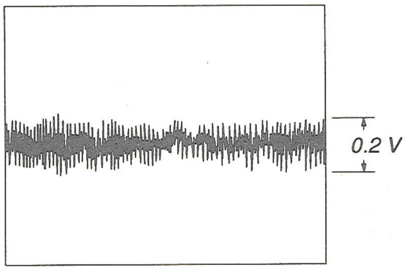
❶ IC101 ㉝ pin (PLAY MODE)



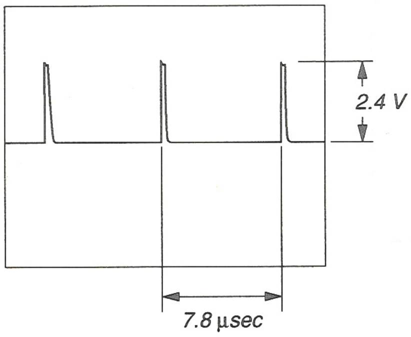
❷ IC101 ② pin (FEI) (PLAY MODE)



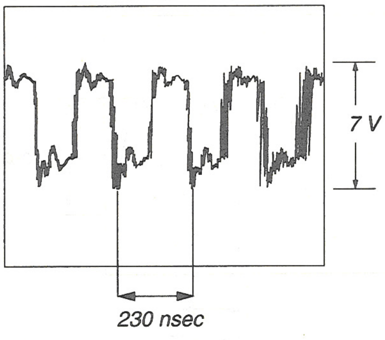
❸ IC101 ㊼ pin (TEI) (PLAY MODE)



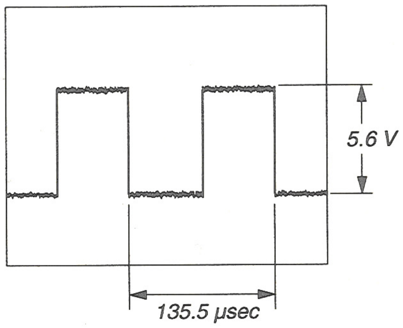
❹ IC103 ㉗ pin (MDP)



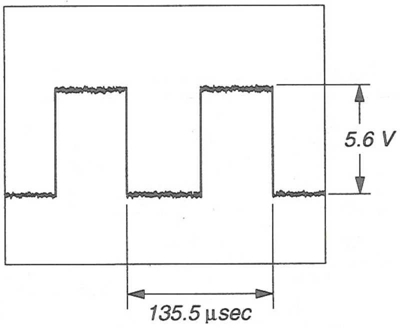
❺ IC103 (60) pin (XPCK)



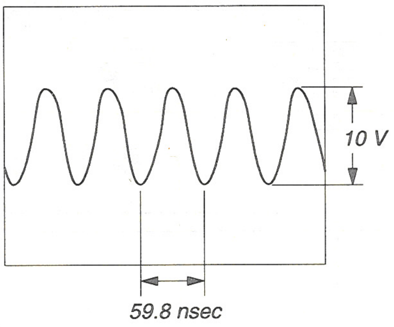
❻ IC103 (62) pin (RFCK)



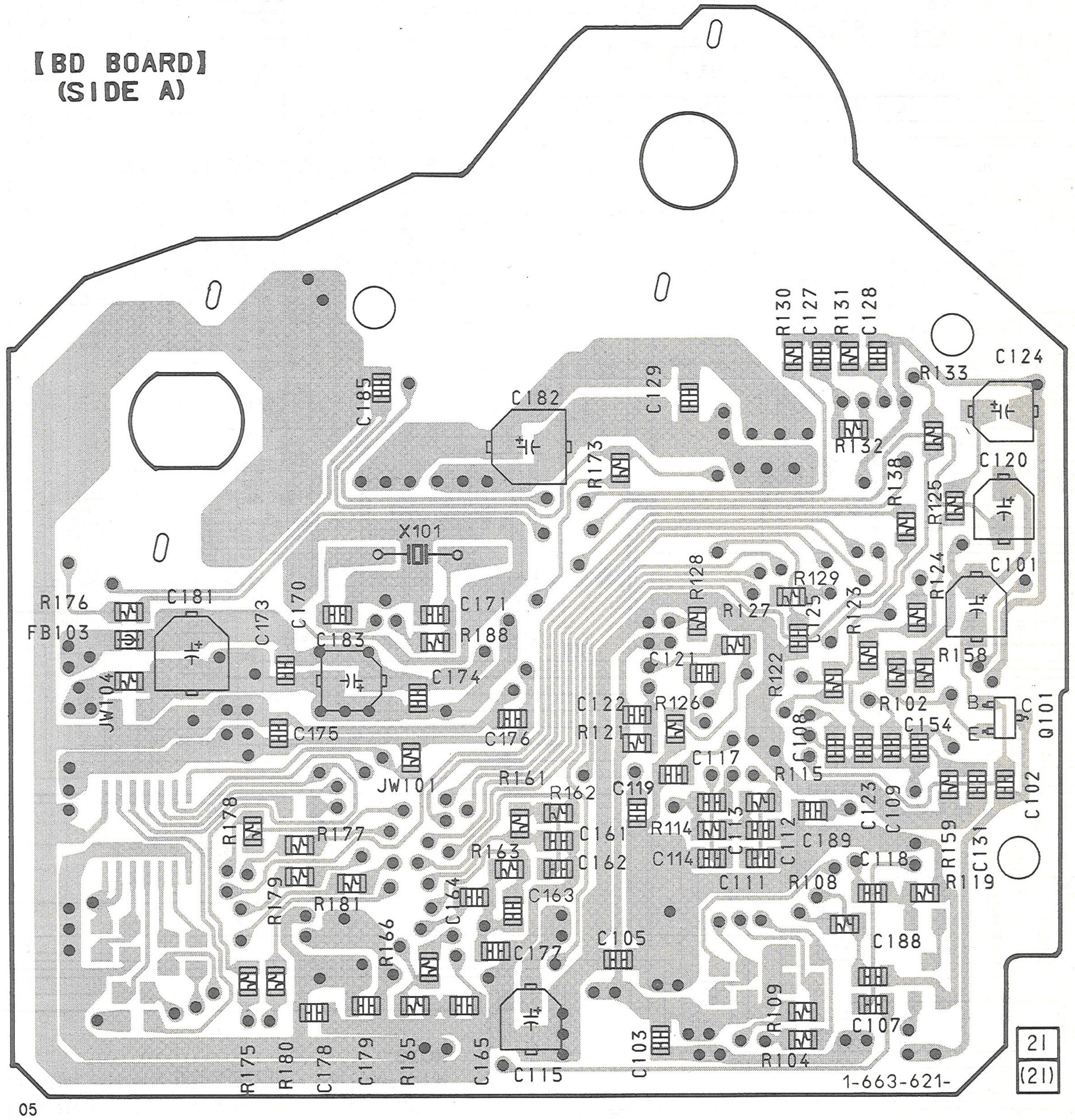
❼ IC103 (74) pin (WFCK)

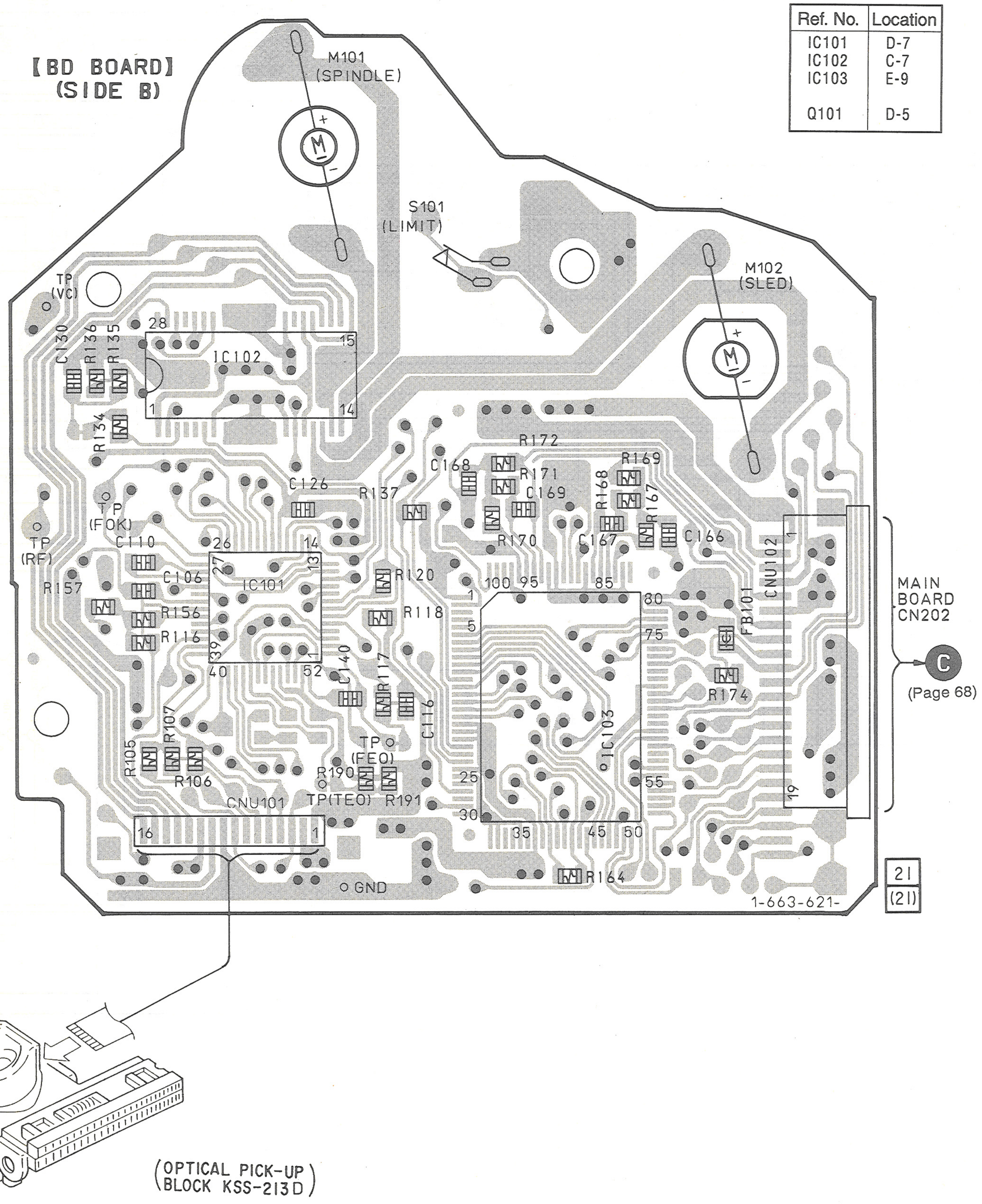


❽ IC103 (89) pin (XTAI)



6-3. PRINTED WIRING BOARD – CD Section – • See page 41 for Circuit Boards Location.


[BD BOARD]
(SIDE A)
X101
JW101
JW104
FB103
Q101
1-663-621-
21
(21)
05


[BD BOARD]
(SIDE B)
M101
(SPINDLE)
S101
(LIMIT)
M102
(SLED)
TP (VC)
IC102
IC101
IC103
TP (FOK)
TP (RF)
TP (FEO)
TP(TEO)
GND
CNU101
CNU102
FB101
MAIN BOARD CN202
C
(Page 68)
1-663-621-
21
(21)
OPTICAL PICK-UP BLOCK KSS-213D

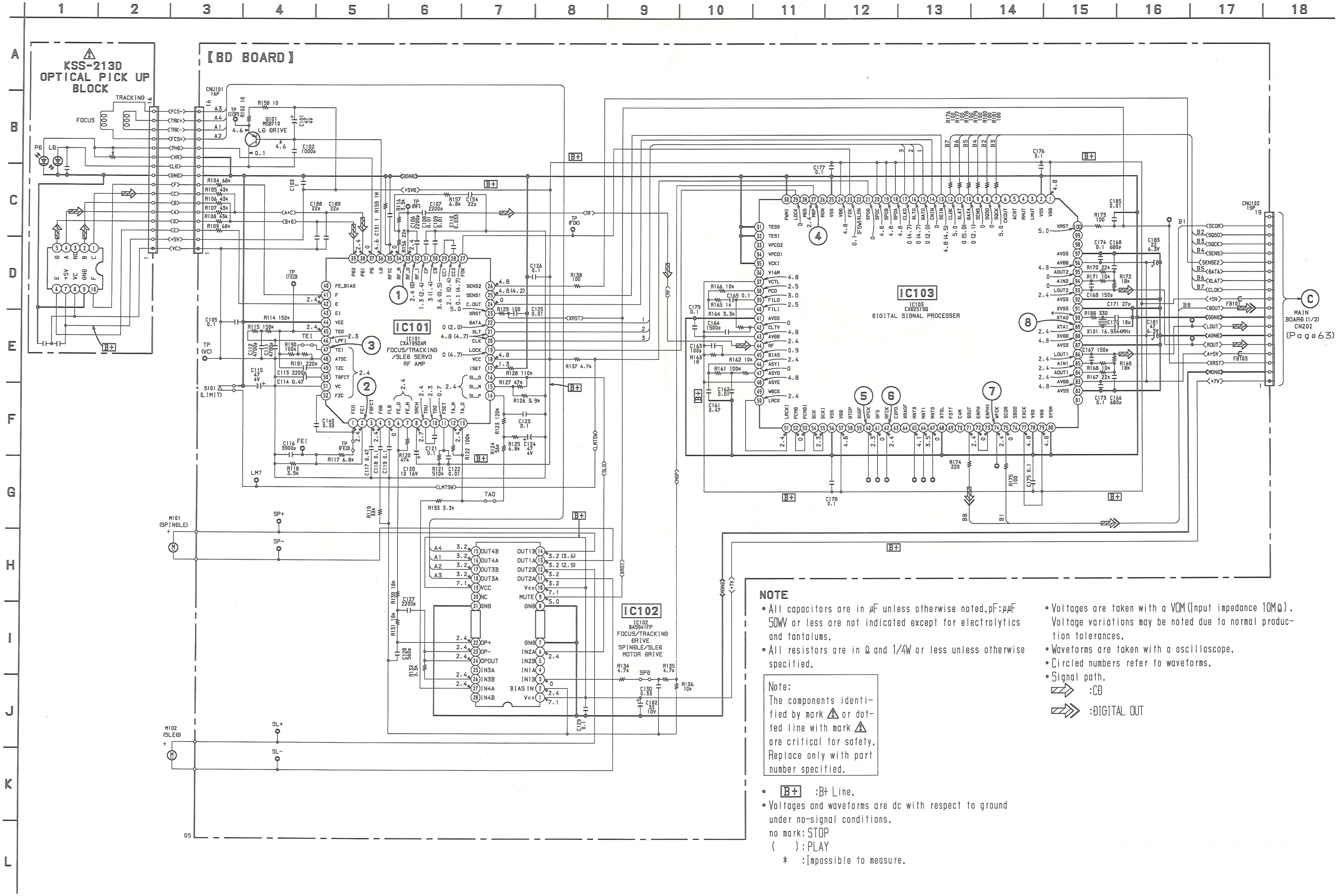
• **Semiconductor Location**

Ref. No.	Location
IC101	D-7
IC102	C-7
IC103	E-9
Q101	D-5

Note on Printed Wiring Board:

- ○—— : parts extracted from the component side.

6-4. SCHEMATIC DIAGRAM – CD Section – • See page 82 for IC Block Diagrams.


KSS-213D
OPTICAL PICK UP BLOCK
[BD BOARD]
IC101
CXA1992AR
FOCUS/TRACKING/SLED SERVO
RF AMP
IC102
BA5941FP
FOCUS/TRACKING DRIVE
SPINDLE/SLED MOTOR DRIVE
IC103
CXD2519Q
DIGITAL SIGNAL PROCESSER
Q101 MSB710 LD DRIVE
X101 16.9344MHz
M101 (SPINDLE)
M102 (SLED)
S101 (LIMIT)
CNU101 16P
CNU102 19P
MAIN BOARD (1/2) CN202 (Page 63)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
A B C D E F G H I J K L

NOTE

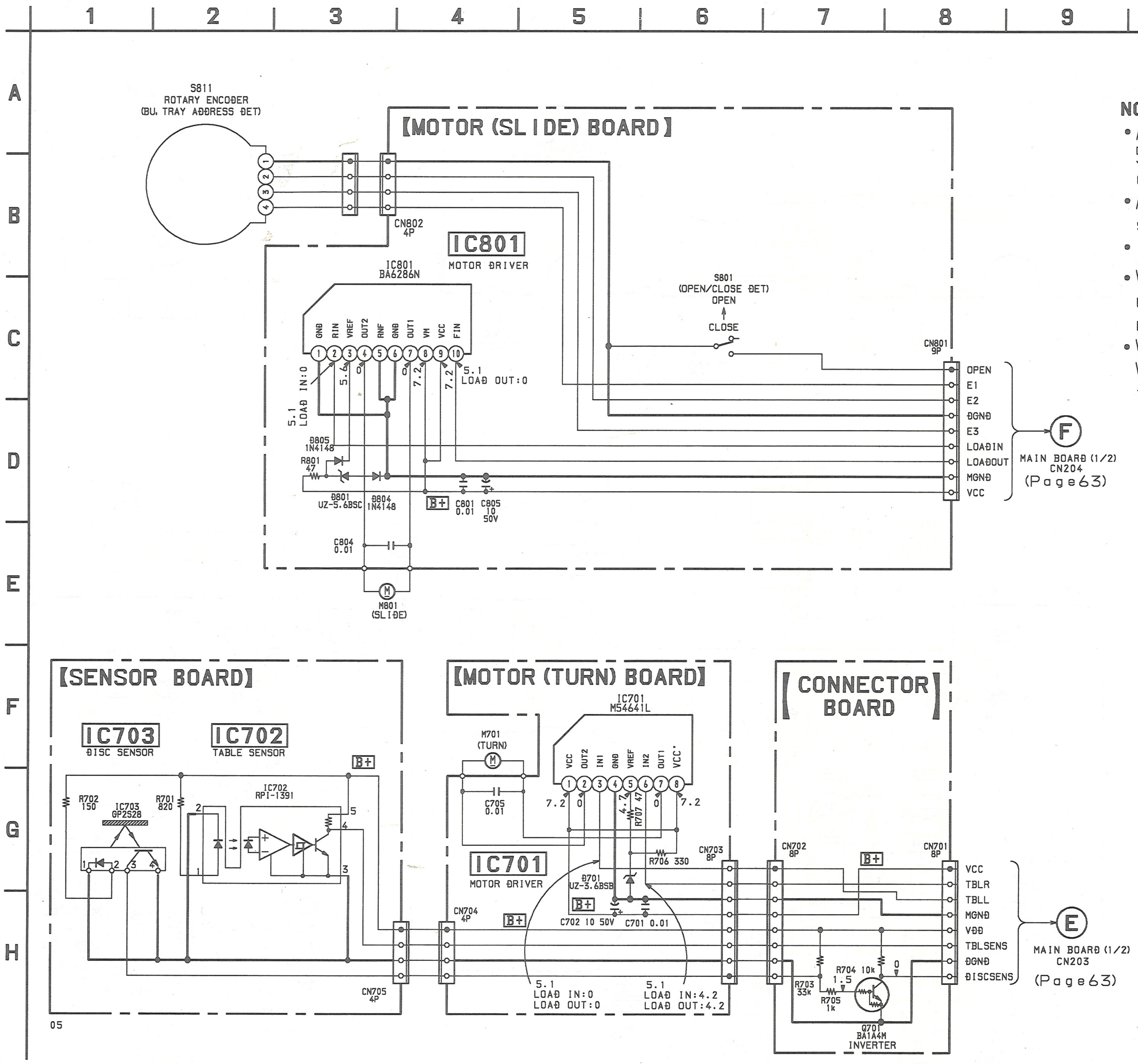
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- [B+] :B+ Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark: STOP
  ( ) : PLAY
  * : Impossible to measure.

- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ :CD
  ⇨ :DIGITAL OUT

6-6. SCHEMATIC DIAGRAM – CD MOTOR Section – • See page 82 for IC Block Diagrams.


1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
S811
ROTARY ENCODER
(BU. TRAY ADDRESS DET)
[MOTOR (SLIDE) BOARD]
CN802
4P
IC801
MOTOR DRIVER
IC801
BA6286N
GND
RIN
VREF
OUT2
RNF
GND
OUT1
VM
VCC
FIN
5.1
LOAD IN:0
5.1
LOAD OUT:0
S801
(OPEN/CLOSE DET)
OPEN
CLOSE
CN801
9P
OPEN
E1
E2
DGND
E3
LOADIN
LOADOUT
MGND
VCC
F
MAIN BOARD (1/2)
CN204
(Page63)
D805
1N4148
R801
47
D801
UZ-5.6BSC
D804
1N4148
B+
C801
0.01
C805
10
50V
C804
0.01
M801
(SLIDE)
[SENSOR BOARD]
IC703
DISC SENSOR
IC702
TABLE SENSOR
R702
150
IC703
GP2S28
R701
820
IC702
RPI-1391
CN705
4P
05
[MOTOR (TURN) BOARD]
IC701
M54641L
M701
(TURN)
C705
0.01
VCC
OUT2
IN1
GND
VREF
IN2
OUT1
VCC'
R707 47
R706 330
IC701
MOTOR DRIVER
D701
UZ-3.6BSB
C702 10 50V
C701 0.01
CN704
4P
CN703
8P
5.1
LOAD IN:0
LOAD OUT:0
5.1
LOAD IN:4.2
LOAD OUT:4.2
[CONNECTOR BOARD]
CN702
8P
CN701
8P
VCC
TBLR
TBLL
MGND
VDD
TBLSENS
DGND
DISCSENS
E
MAIN BOARD (1/2)
CN203
(Page63)
R703
33k
R704 10k
R705
1k
Q701
BA1A4M
INVERTER

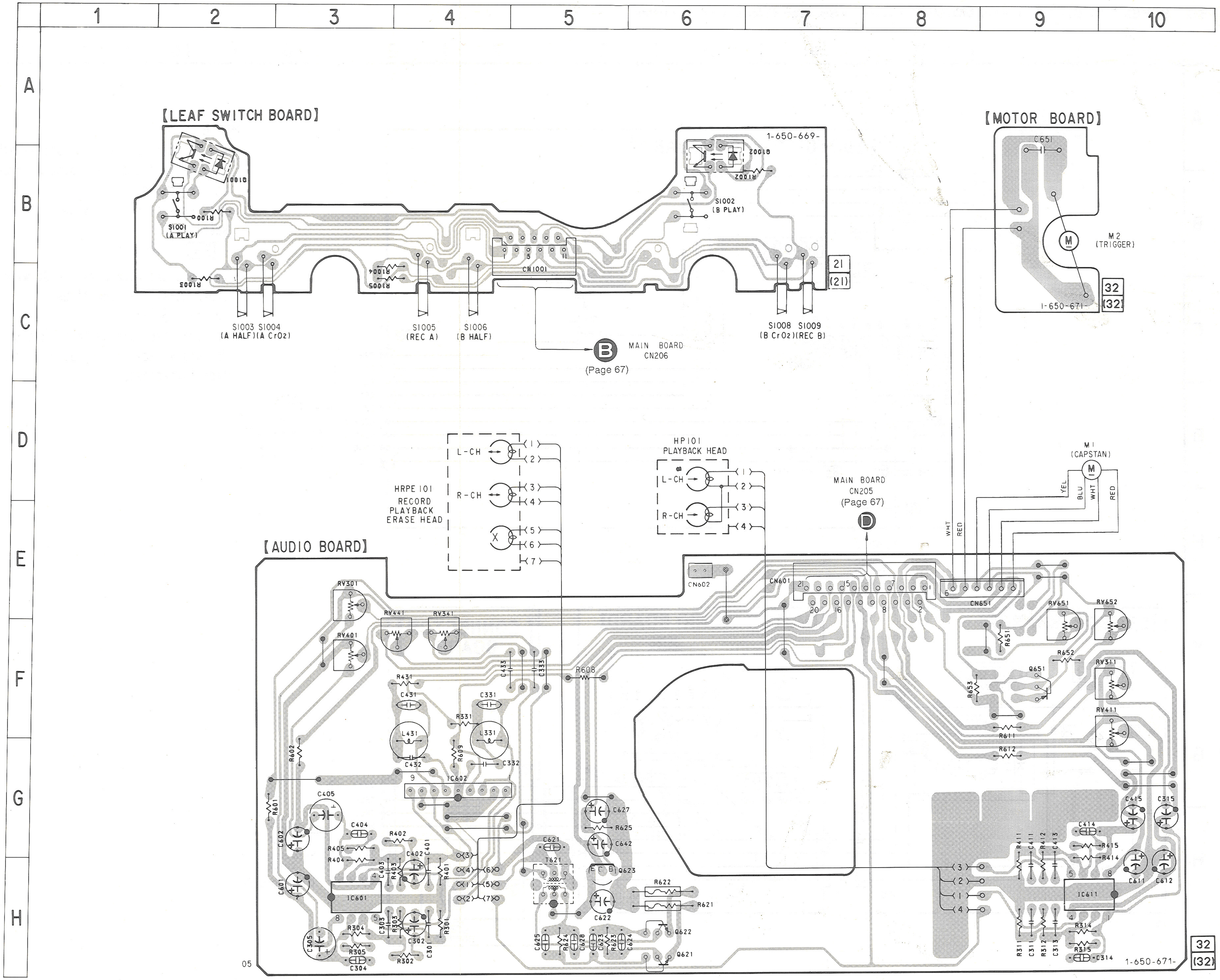
NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- B+ : B+ Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark: STOP
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.

6-7. PRINTED WIRING BOARDS – DECK Section – • See page 41 for Circuit Boards Location.

• Semiconductor Location

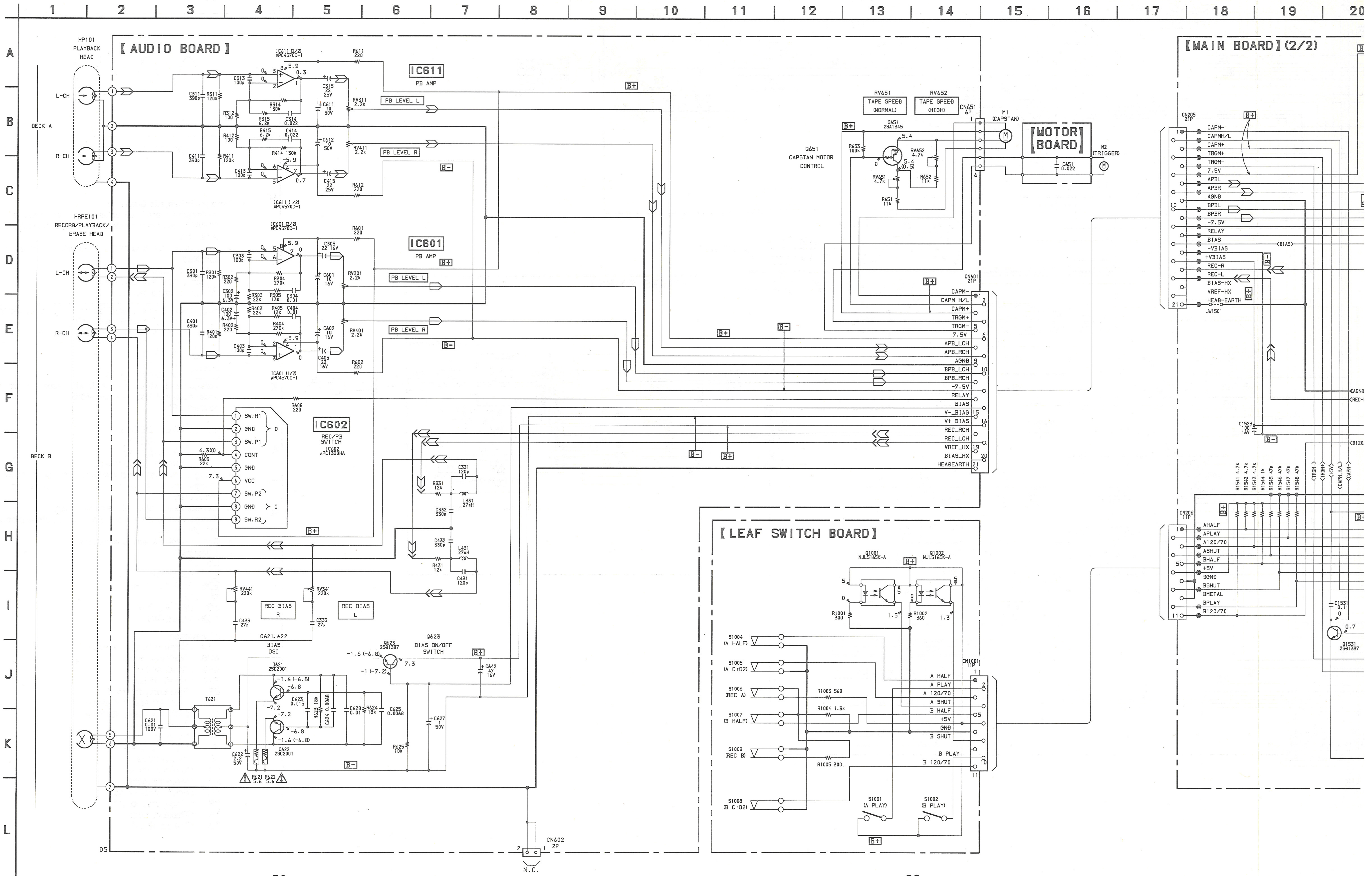
Ref. No.	Location
IC601	H-3
IC602	G-4
IC611	H-9
Q621	H-6
Q622	H-6
Q623	H-5
Q651	F-9
Q1001	B-2
Q1002	B-6


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
[LEAF SWITCH BOARD]
1-650-669-
S1001 (A PLAY)
S1002 (B PLAY)
CN1001
R1001
R1002
R1003
R1004
R1005
S1003 S1004 (A HALF)(A CrO2)
S1005 (REC A)
S1006 (B HALF)
S1008 S1009 (B CrO2)(REC B)
21
(21)
B MAIN BOARD CN206
(Page 67)
[MOTOR BOARD]
C651
M2 (TRIGGER)
1-650-671-
32
(32)
HRPE101 RECORD PLAYBACK ERASE HEAD
L-CH
R-CH
HP101 PLAYBACK HEAD
MAIN BOARD CN205
(Page 67)
D
M1 (CAPSTAN)
YEL
BLU
WHT
RED
[AUDIO BOARD]
RV301
RV401
RV441
RV341
CN602
CN601
CN651
RV651
RV652
RV311
RV411
R651
R652
R653
Q651
R611
R612
R608
R431
C431
C331
R331
L431
L331
C432
C332
R609
C433
C333
R602
R601
IC602
C405
C404
R402
R405
R404
C402
C401
R403
R401
C602
C601
IC601
C305
R304
R305
C304
C303
R303
C302
R302
R301
C301
C627
R625
C621
C642
T621
Q623
C622
R622
R621
Q622
Q621
C625
R624
C628
C623
R623
C624
C415
C315
C414
R415
R414
R411
C411
R412
C413
IC611
C611
C612
R314
R315
C314
R311
C311
R312
C313
05
1-650-671-
32
(32)

Note on Printed Wiring Board:

- ○—— : parts extracted from the component side.

6-8. SCHEMATIC DIAGRAM – DECK Section – • See page 82 for IC Block Diagrams and page 67 for Printed Wiring Board (MAIN BOARD).



1
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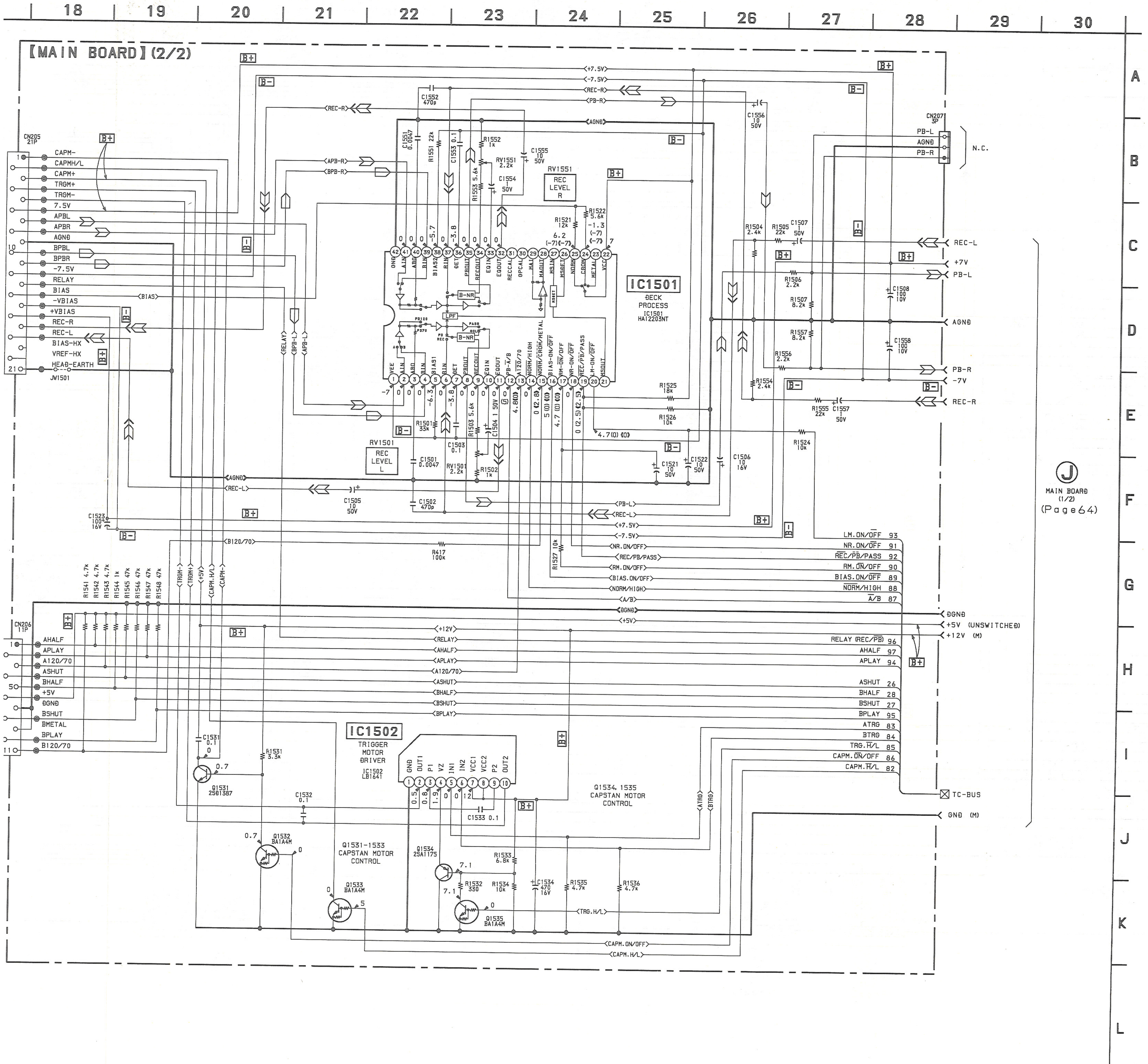
9
10
11
12
13
14
15
16
17
18
19
20
A
B
C
D
E
F
G
H
I
J
K
L
HP101
PLAYBACK
HEAD
L-CH
R-CH
DECK A
HRPE101
RECORD/PLAYBACK/
ERASE HEAD
DECK B
【AUDIO BOARD】
IC611 (2/2)
μPC4570C-1
IC611 (1/2)
μPC4570C-1
IC611
PB AMP
PB LEVEL L
PB LEVEL R
IC601 (2/2)
μPC4570C-1
IC601 (1/2)
μPC4570C-1
IC601
PB AMP
IC602
REC/PB
SWITCH
IC602
μPC1330HA
SW.R1
GND
SW.P1
CONT
VCC
SW.P2
SW.R2
REC BIAS R
REC BIAS L
Q621, 622
BIAS
OSC
Q621
2SC2001
Q622
2SC2001
Q623
2SB1387
Q623
BIAS ON/OFF
SWITCH
T621
CN602
2P
N.C.
RV651
TAPE SPEED
(NORMAL)
RV652
TAPE SPEED
(HIGH)
Q651
2SA1345
Q651
CAPSTAN MOTOR
CONTROL
CN651
6P
M1
(CAPSTAN)
【MOTOR BOARD】
M2
(TRIGGER)
CN601
21P
CAPM−
CAPM H/L
CAPM+
TRGM+
TRGM−
7.5V
APB_LCH
APB_RCH
AGND
BPB_LCH
BPB_RCH
−7.5V
RELAY
BIAS
V−_BIAS
V+_BIAS
REC_RCH
REC_LCH
VREF_HX
BIAS_HX
HEADEARTH
【LEAF SWITCH BOARD】
Q1001
NJL5165K-A
Q1002
NJL5165K-A
S1004
(A HALF)
S1005
(A CrO2)
S1006
(REC A)
S1007
(B HALF)
S1009
(REC B)
S1008
(B CrO2)
S1001
(A PLAY)
S1002
(B PLAY)
CN1001
11P
A HALF
A PLAY
A 120/70
A SHUT
B HALF
+5V
GND
B SHUT
B PLAY
B 120/70
【MAIN BOARD】(2/2)
CN205
21P
CAPM−
CAPMH/L
CAPM+
TRGM+
TRGM−
7.5V
APBL
APBR
AGND
BPBL
BPBR
−7.5V
RELAY
BIAS
−VBIAS
+VBIAS
REC-R
REC-L
BIAS-HX
VREF-HX
HEAD-EARTH
JW1501
CN206
11P
AHALF
APLAY
A120/70
ASHUT
BHALF
+5V
DGND
BSHUT
BMETAL
BPLAY
B120/70
Q1531
2SB1387
B+
B−


18
19
20
21
22
23
24
25
26
27
28
29
30
A
B
C
D
E
F
G
H
I
J
K
L
[MAIN BOARD] (2/2)
CN205 21P
CAPM-
CAPMH/L
CAPM+
TRGM+
TRGM-
7.5V
APBL
APBR
AGND
BPBL
BPBR
-7.5V
RELAY
BIAS
-VBIAS
+VBIAS
REC-R
REC-L
BIAS-HX
VREF-HX
HEAD-EARTH
JW1501
IC1501
DECK PROCESS
IC1501 HA12203NT
RV1551 REC LEVEL R
RV1501 REC LEVEL L
CN207 3P
PB-L
AGND
PB-R
N.C.
REC-L
+7V
PB-L
AGND
PB-R
-7V
REC-R
J
MAIN BOARD (1/2)
(Page 64)
LM.ON/OFF 93
NR.ON/OFF 91
REC/PB/PASS 92
RM.ON/OFF 90
BIAS.ON/OFF 89
NORM/HIGH 88
A/B 87
BGND
+5V (UNSWITCHED)
+12V (M)
RELAY (REC/PB) 96
AHALF 97
APLAY 94
ASHUT 26
BHALF 28
BSHUT 27
BPLAY 95
ATRG 83
BTRG 84
TRG.H/L 85
CAPM.ON/OFF 86
CAPM.H/L 82
TC-BUS
GND (M)
CN206 11P
AHALF
APLAY
A120/70
ASHUT
BHALF
+5V
BGND
BSHUT
BMETAL
BPLAY
B120/70
IC1502
TRIGGER MOTOR DRIVER
IC1502 LB1641
Q1531 2SB1387
Q1532 BA1A4M
Q1533 BA1A4M
Q1531-1533 CAPSTAN MOTOR CONTROL
Q1534 2SA1175
Q1535 BA1A4M
Q1534, 1535 CAPSTAN MOTOR CONTROL
B+
B-

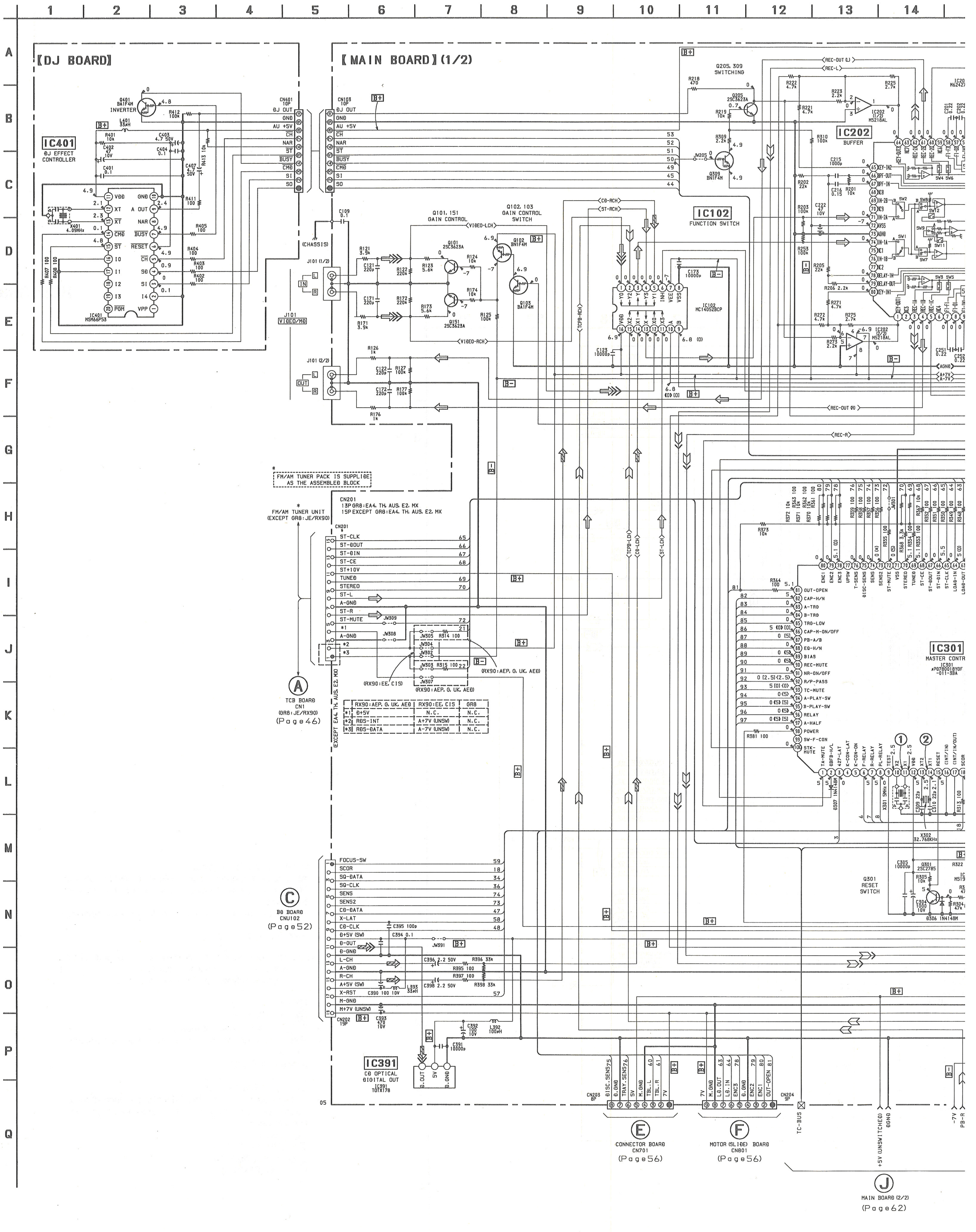
Note on Schematic Diagram:

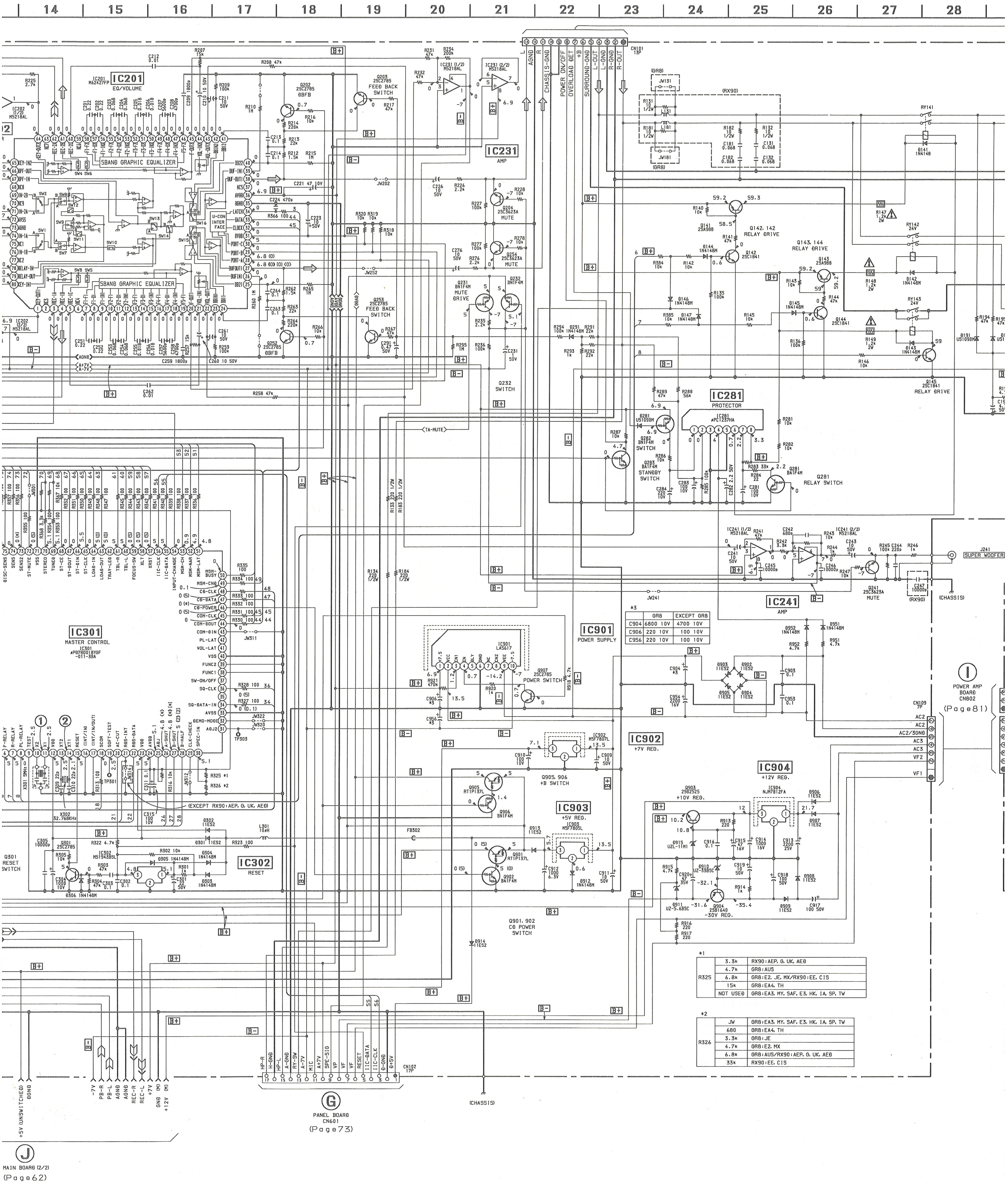
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $^1/_4$ W or less unless otherwise specified.
- -∿∿- : fusible resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- B+ : B+ Line.
- B– : B- Line.
- ▭ : adjustment for repair.
- Voltages are dc with respect to ground under no-signal conditions.
  - no mark : REC (DECK B)
  - ( ) : PB (DECK B)
  - << >> : PB (DECK A)
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  - ▷ : PB (DECK A)
  - ▷▷ : REC (DECK B)
  - ⊐> : PB (DECK B)

6-9. SCHEMATIC DIAGRAM – MAIN/POWER Section – • See page 82 for IC Block Diagrams.


【DJ BOARD】
IC401 DJ EFFECT CONTROLLER
IC401 MSM6653
Q401 BA1F4M INVERTER
X401 4.096MHz
CN401 10P
【MAIN BOARD】(1/2)
CN103 10P
DJ OUT
GND
AU +5V
CH
NAR
ST
BUSY
CMD
SI
SO
Q101, 151 GAIN CONTROL
Q102, 103 GAIN CONTROL SWITCH
IC102 FUNCTION SWITCH
IC102 MC14052BCP
IC202 BUFFER
IC202 M5218AL
Q205, 309 SWITCHING
J101 (1/2) IN
J101 (2/2) OUT
J101 VIDEO/MD
(CHASSIS)
* FM/AM TUNER PACK IS SUPPLIED AS THE ASSEMBLED BLOCK
* FM/AM TUNER UNIT (EXCEPT GR8: JE/RX90)
CN201 13P GR8: EA4, TH, AUS, E2, MX 15P EXCEPT GR8: EA4, TH, AUS, E2, MX
ST-CLK
ST-DOUT
ST-DIN
ST-CE
ST+10V
TUNED
STEREO
ST-L
A-GND
ST-R
ST-MUTE
(EXCEPT EA4, TH, AUS, E2, MX)
(RX90: EE, CIS)
(RX90: AEP, G, UK, AED)
	RX90: AEP, G, UK, AED	RX90: EE, CIS	GR8
*1	B+5V	N.C.	N.C.
*2	RDS-INT	A+7V (UNSW)	N.C.
*3	RDS-DATA	A-7V (UNSW)	N.C.
A TCB BOARD CN1 (GR8: JE/RX90) (Page46)
C BD BOARD CNU102 (Page52)
FOCUS-SW
SCOR
SQ-DATA
SQ-CLK
SENS
SENS2
CD-DATA
X-LAT
CD-CLK
D+5V (SW)
D-OUT
D-GND
L-CH
A-GND
R-CH
A+5V (SW)
X-RST
M-GND
M+7V (UNSW)
CN202 19P
IC391 CD OPTICAL DIGITAL OUT
IC391 TOTX178
D.OUT
5V
D.GND
CN203 8P
DISC.SENS
D.GND
TRAY.SENS
5V
M.GND
TBL.L
TBL.R
7V
CN204 9P
LD.OUT
LD.IN
ENC3
ENC2
ENC1
OUT-OPEN
E CONNECTOR BOARD CN701 (Page56)
F MOTOR (SLIDE) BOARD CN801 (Page56)
TC-BUS
+5V (UNSWITCHED)
DGND
-7V
PB-R
J MAIN BOARD (2/2) (Page62)
IC301 MASTER CONTROL
IC301 #P07800181YOF-011-3BA
Q301 RESET SWITCH
Q301 2SC2785
X301 5MHz
X302 32.768KHz
D307 1N4148M
D306 1N4148M
OUT-OPEN
CAP-H/N
A-TRO
B-TRO
TRO-LOW
CAP-H-ON/OFF
PB-A/B
EQ-H/N
BIAS
REC-MUTE
NR-ON/OFF
R/P-PASS
TC-MUTE
A-PLAY-SW
B-PLAY-SW
RELAY
A-HALF
POWER
SW-F-CON
STK-MUTE
TA-MUTE
DBFB-H/L
427-LAT
K-CON-LAT
K-CON-ON
F-RELAY
R-RELAY
PL-RELAY
TEST
XT2
XT1
VDD
RESET
(INT/IN)
(INT/IN/OUT)
SCOR
ENC1
ENC2
ENC3
UPSW
T-SENS
DISC-SENS
SENS
SENS2
ST-MUTE
VSS
STEREO
TUNED
ST-CE
ST-DOUT
ST-DIN
ST-CLK
LOAD-IN
LOAD-OUT
REC-OUT (L)
REC-L
REC-OUT (R)
REC-R
CD-RCH
ST-RCH
CD-LCH
ST-LCH
TCPB-RCH
TCPB-LCH
VIDEO-LCH
VIDEO-RCH
AGND
A+7V
A-7V
KEY-OUT
KEY-IN
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I J K L M N O P Q


IC201
EQ/VOLUME
5BAND GRAPHIC EQUALIZER
IC231
AMP
IC301
MASTER CONTROL
IC302
RESET
Q301
RESET SWITCH
IC281
PROTECTOR
IC241
AMP
IC901
POWER SUPPLY
IC902
+7V REG.
IC903
+5V REG.
IC904
+12V REG.
Q203
FEED BACK SWITCH
Q253
FEED BACK SWITCH
Q231
MUTE DRIVE
Q232
SWITCH
Q204, Q254
MUTE
Q141, 142
RELAY DRIVE
Q143, 144
RELAY DRIVE
Q145
RELAY DRIVE
Q281
RELAY SWITCH
Q282
SWITCH
Q283
STANDBY SWITCH
Q241
MUTE
Q907
POWER SWITCH
Q905, 906
+B SWITCH
Q901, 902
CD POWER SWITCH
Q903
+10V REG.
Q904
-30V REG.
J241
SUPER WOOFER
CN101
13P
AGND
R
CHASSIS-GND
POWER ON/OFF
OVERLOAD DET
+B
SURROUND-GND
L-OUT
L-GND
R-GND
R-OUT
(RX90)
(GR8)
(EXCEPT RX90: AEP, G, UK, AED)
(CHASSIS)
POWER AMP BOARD
CN802
(Page81)
CN109
7P
AC2
AC2
AC2/30ND
AC3
AC3
VF2
VF1
PANEL BOARD
CN601
(Page73)
CN102
17P
HP-R
H-GND
HP-L
A-GND
RY-SW
A-7V
MIC
A+7V
SPE-SIG
VP
VF
VF
RESET
IIC-DATA
IIC-CLK
D-GND
D+5V
MAIN BOARD (2/2)
(Page62)
+5V (UNSWITCHED)
DGND
-7V
PB-R
PB-L
AGND
AGND
REC-R
REC-L
+7V
GND (M)
+12V (M)
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

*3

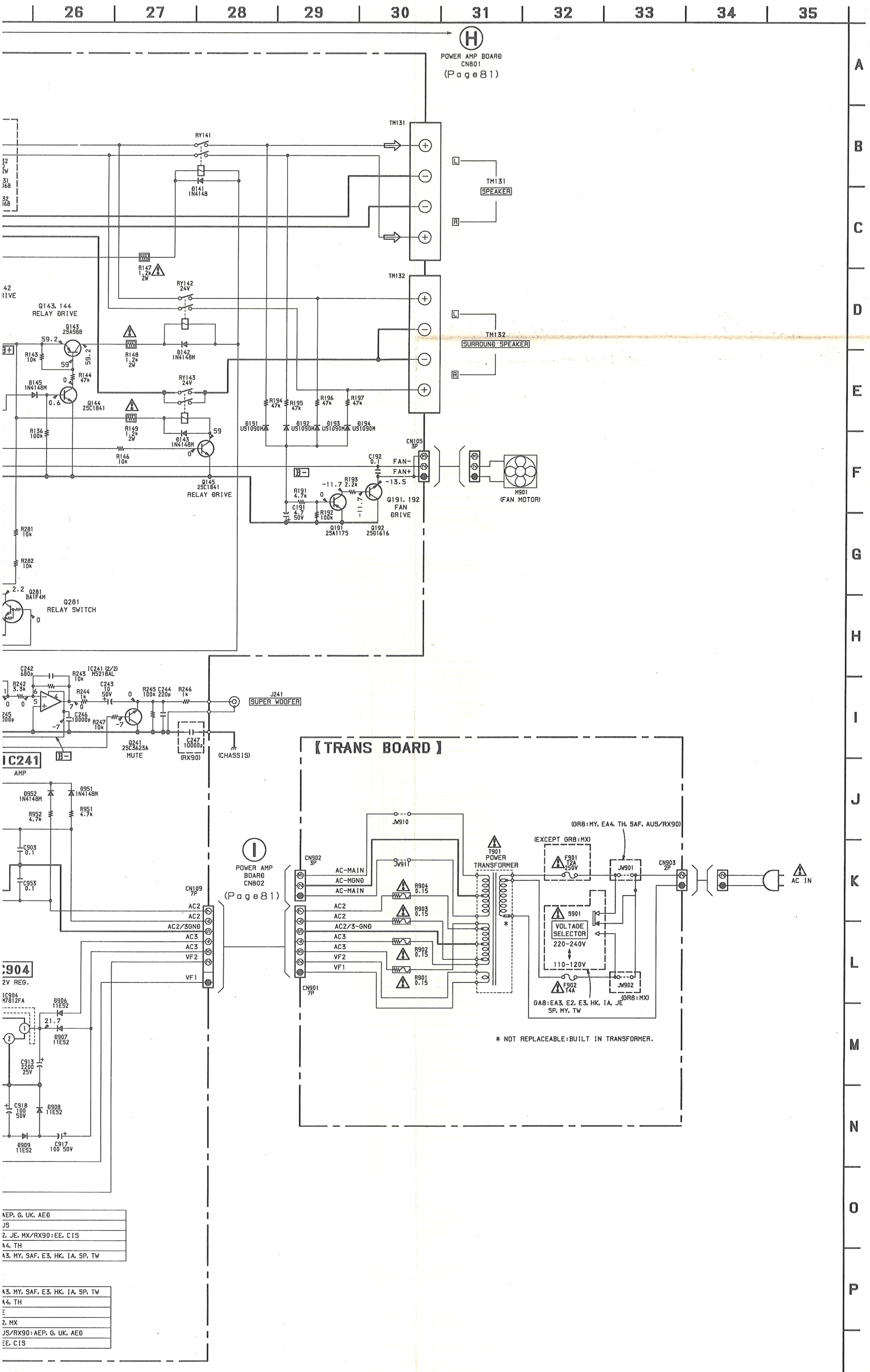
	GR8	EXCEPT GR8
C904	6800 10V	4700 10V
C906	220 10V	100 10V
C956	220 10V	100 10V

*1

R325	3.3k	RX90: AEP, G, UK, AED
	4.7k	GR8: AUS
	6.8k	GR8: E2, JE, MX/RX90: EE, CIS
	15k	GR8: EA4, TH
	NOT USED	GR8: EA3, MY, SAF, E3, HK, IA, SP, TW

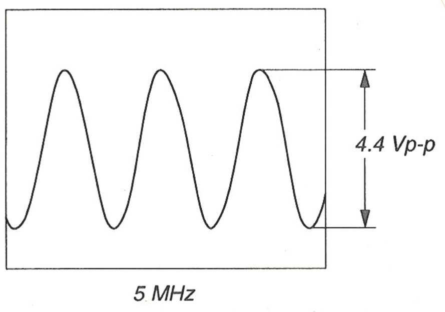
*2

R326	JW	GR8: EA3, MY, SAF, E3, HK, IA, SP, TW
	680	GR8: EA4, TH
	3.3k	GR8: JE
	4.7k	GR8: E2, MX
	6.8k	GR8: AUS/RX90: AEP, G, UK, AED
	33k	RX90: EE, CIS

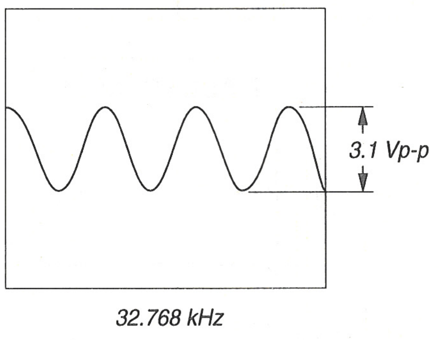

26
27
28
29
30
31
32
33
34
35
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
H
POWER AMP BOARD
CN801
(Page81)
TM131
SPEAKER
TM132
SURROUND SPEAKER
RY141
D141 1N4148
RY142 24V
D142 1N4148M
RY143 24V
D143 1N4148M
R147 1.2k 2W
R148 1.2k 2W
R149 1.2k 2W
Q143, 144 RELAY DRIVE
Q143 2SA988
Q144 2SC1841
Q145 2SC1841 RELAY DRIVE
D145 1N4148M
R143 10k
R144 47k
R136 100k
R146 10k
59.2
0.6
59
R194 47k
R195 47k
R196 47k
R197 47k
D191 US1090M
D192 US1090M
D193 US1090M
D194 US1090M
CN105 3P
FAN-
FAN+
C192 0.1
-13.5
-11.7
R191 4.7k
R192 100k
R193 2.2k
C191 4.7 50V
Q191 2SA1175
Q192 2SD1616
Q191, 192 FAN DRIVE
M901 (FAN MOTOR)
R281 10k
R282 10k
Q281 BA1F4M
Q281 RELAY SWITCH
C242 680p
R242 3.3k
IC241 (2/2) NS218AL
R243 10k
R244 1k
C243 10 50V
R245 100k
C244 220p
R246 1k
C246 10000p
R247 10k
Q241 2SC3623A MUTE
C247 10000p (RX90)
(CHASSIS)
J241 SUPER WOOFER
IC241 AMP
D952 1N4148M
D951 1N4148M
R952 4.7k
R951 4.7k
C903 0.1
C953 0.1
CN109 7P
AC2
AC2
AC2/3GND
AC3
AC3
VF2
VF1
IC904 2V REG.
IC904 M7812FA
D906 11ES2
D907 11ES2
D908 11ES2
D909 11ES2
C913 2200 25V
C918 100 50V
C917 100 50V
21.7
I
POWER AMP BOARD
CN802
(Page81)
【TRANS BOARD】
CN902 3P
AC-MAIN
AC-MGND
AC-MAIN
CN901 7P
AC2
AC2
AC2/3-GND
AC3
AC3
VF2
VF1
JW910
JW911
R904 0.15
R903 0.15
R902 0.15
R901 0.15
T901 POWER TRANSFORMER
(EXCEPT GRB:MX)
F901 T2A 250V
S901 VOLTAGE SELECTOR 220-240V 110-120V
F902 T4A
GAB:EA3, E2, E3, HK, IA, JE SP, MY, TW
JW901
JW902
(GRB:MY, EA4, TH, SAF, AUS/RX90)
(GRB:MX)
CN903 2P
AC IN
* NOT REPLACEABLE:BUILT IN TRANSFORMER.
AEP, G, UK, AED
JS
2, JE, MX/RX90:EE, CIS
4, TH
3, MY, SAF, E3, HK, IA, SP, TW
3, MY, SAF, E3, HK, IA, SP, TW
4, TH
2, MX
JS/RX90:AEP, G, UK, AED
EE, CIS

- **Waveforms**

① IC301 ⑪



② IC301 ⑭



Note on Schematic Diagram:

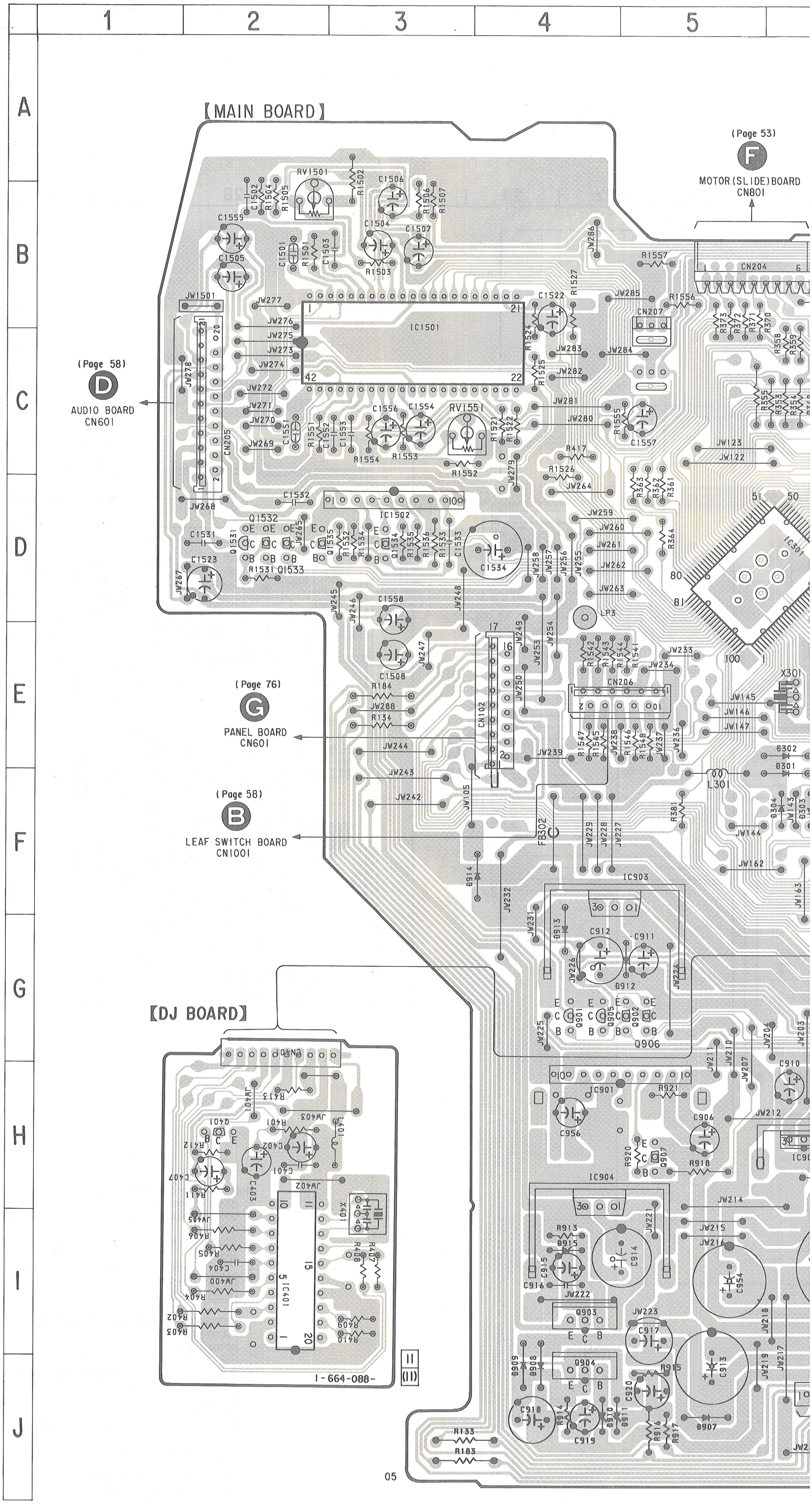
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $^1/_4$ W or less unless otherwise specified.
- △ : internal component.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- B+ : B+ Line.
- B− : B- Line.
- ▭ : panel designation.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : CD
  << >> : REC (DECK B)
  [ ] : PB (DECK B)
  { } : PB (DECK A)
  * : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM
  ⇨ : PB (DECK A)
  ⇨ : REC (DECK B)
  ⇨ : CD
  ⇨ : DIGITAL OUT
  ⇨ : VIDEO/MD
- Abbreviation

AED	: Nothern European model
AUS	: Australian model
EA3	: Saudi Arabia
EA4	: Israeil model
EE	: East European model
E2	: 120V AC Area in E model
E3	: 240V AC Area in E model
G	: German model
HK	: Hong Kong model
IA	: Indonesia model
JE	: Tourist model
MX	: Mexican model
MY	: Malaysia model
SAF	: South African model
SP	: Singapore model
TH	: Thailand model
TW	: Taiwan model

6-10. PRINTED WIRING BOARDS – MAIN/POWER Section – • See page 41 for Circuit Boards Location.


1
2
3
4
5
A
B
C
D
E
F
G
H
I
J
【MAIN BOARD】
(Page 53)
F
MOTOR (SLIDE) BOARD
CN801
(Page 58)
D
AUDIO BOARD
CN601
(Page 76)
G
PANEL BOARD
CN601
(Page 58)
B
LEAF SWITCH BOARD
CN1001
【DJ BOARD】
IC1501
IC1502
IC301
IC903
IC904
IC901
IC401
CN205
CN102
CN206
CN207
CN204
X301
X401
RV1501
RV1551
LP3
FB302
L301
1-664-088-
05

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D141	I-11	IC901	H-4
D142	H-11	IC902	H-6
D143	H-11	IC903	F-4
D144	I-10	IC904	H-4
D145	I-10	IC1501	C-3
D146	I-10	IC1502	D-3
D147	I-10		
D191	G-12	Q101	B-12
D192	G-12	Q102	B-11
D193	G-12	Q103	B-12
D194	G-12	Q141	I-11
D281	I-9	Q142	I-10
D291	I-9	Q143	H-11
D301	F-6	Q144	H-10
D302	E-6	Q145	H-11
D303	F-6	Q151	B-12
D304	F-6	Q191	G-12
D305	F-6	Q192	G-12
D306	E-7	Q202	F-11
D307	F-6	Q203	G-11
D902	I-7	Q204	H-9
D903	I-7	Q205	G-7
D904	J-7	Q231	H-9
D905	J-7	Q232	G-9
D906	J-6	Q241	E-13
D907	J-5	Q252	G-9
D908	J-4	Q253	F-9
D909	J-4	Q254	H-8
D910	J-4	Q281	J-10
D911	J-4	Q282	I-9
D912	G-5	Q283	I-9
D913	G-4	Q301	F-7
D914	F-4	Q309	G-8
D915	I-4	Q401	H-2
D951	J-7	Q901	G-4
D952	J-7	Q902	G-5
		Q903	I-4
IC102	C-12	Q904	J-4
IC201	E-10	Q905	G-4
IC202	D-12	Q906	G-5
IC231	G-8	Q907	H-5
IC241	F-12	Q1531	D-2
IC281	I-10	Q1532	D-2
IC301	D-5	Q1533	D-2
IC302	F-6	Q1534	D-3
IC391	B-13	Q1535	D-2
IC401	I-2		

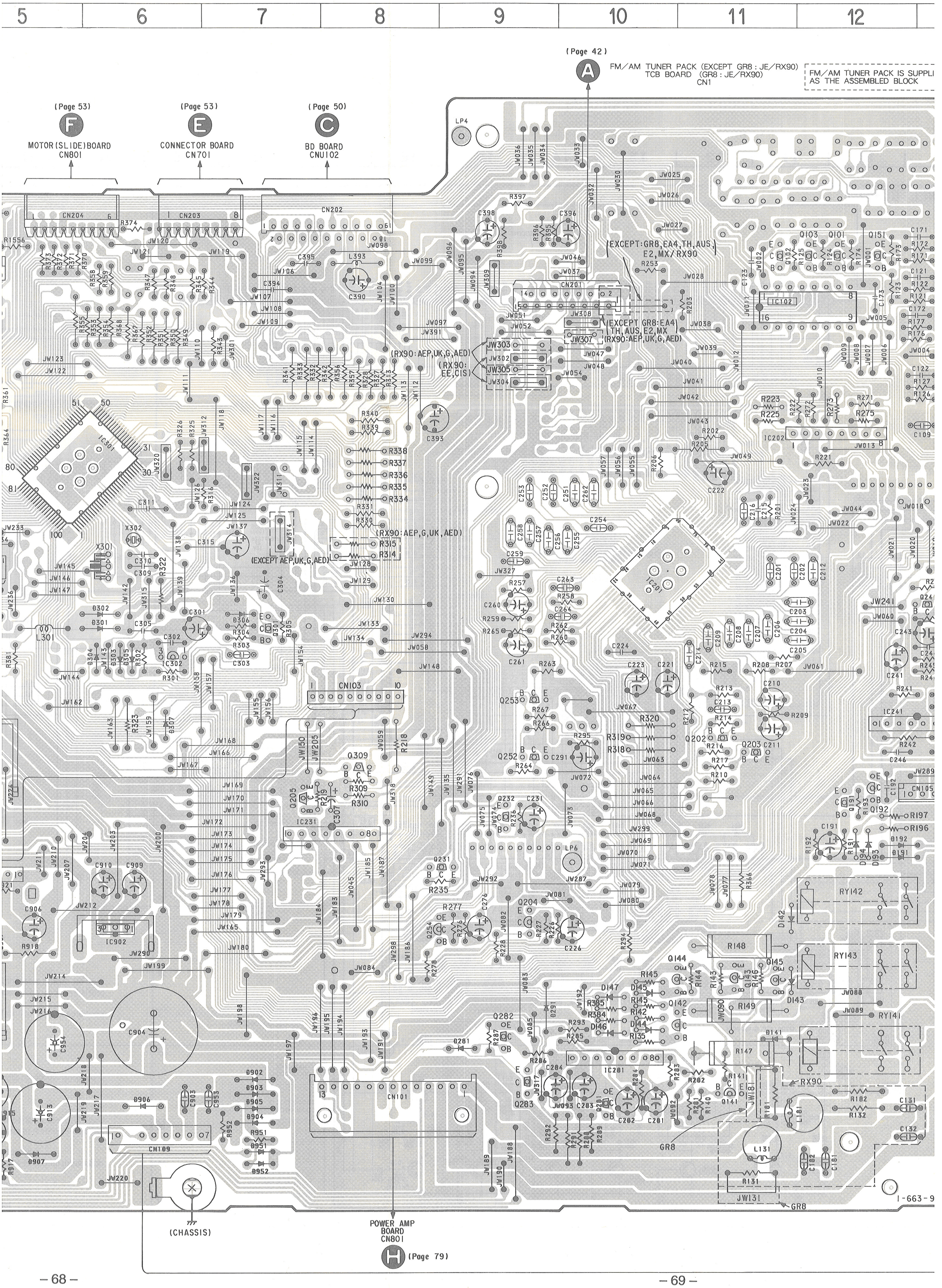
te on Printed Wiring Board:

o—— : parts extracted from the component side.

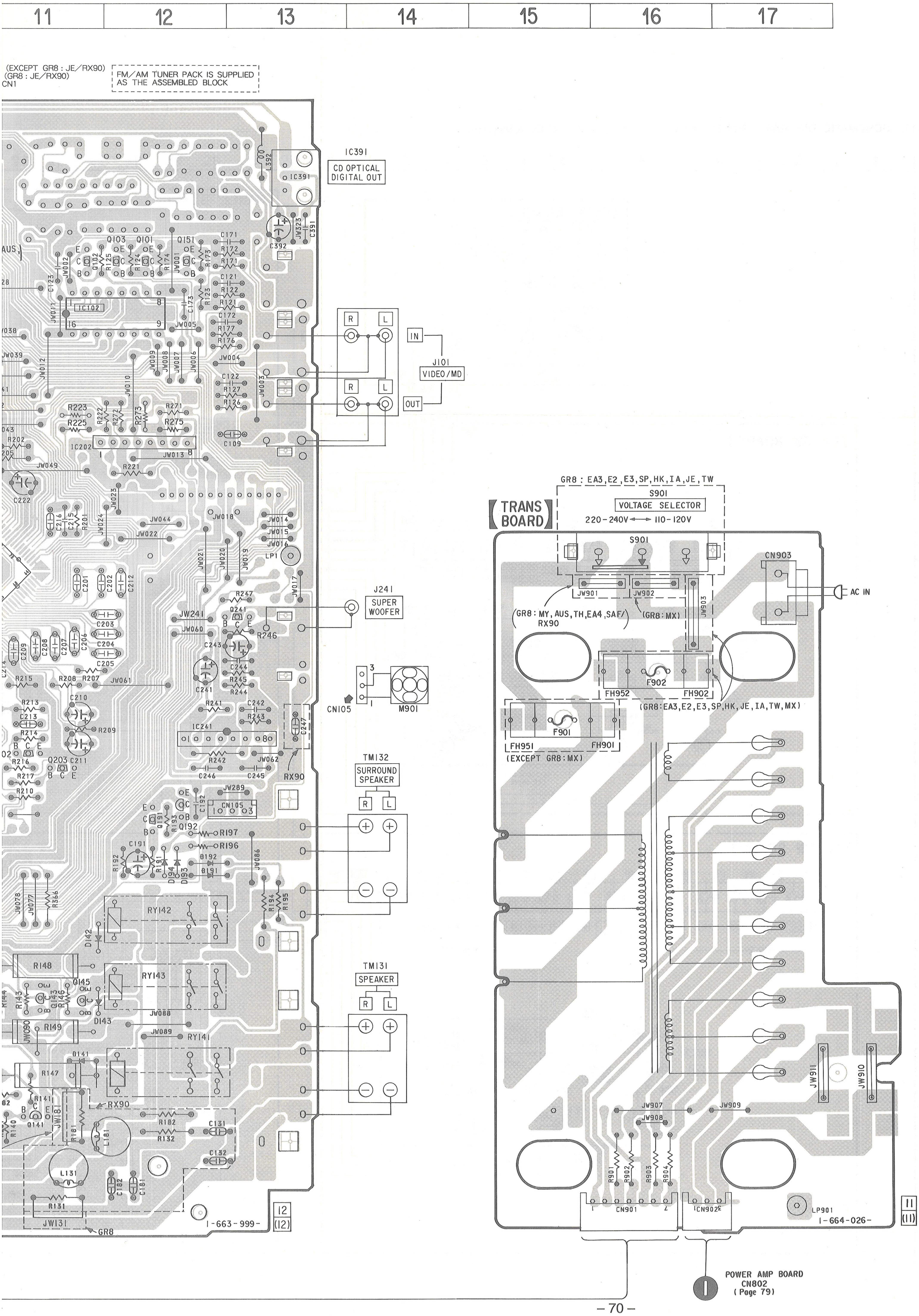
△ : internal component.

Abbreviation

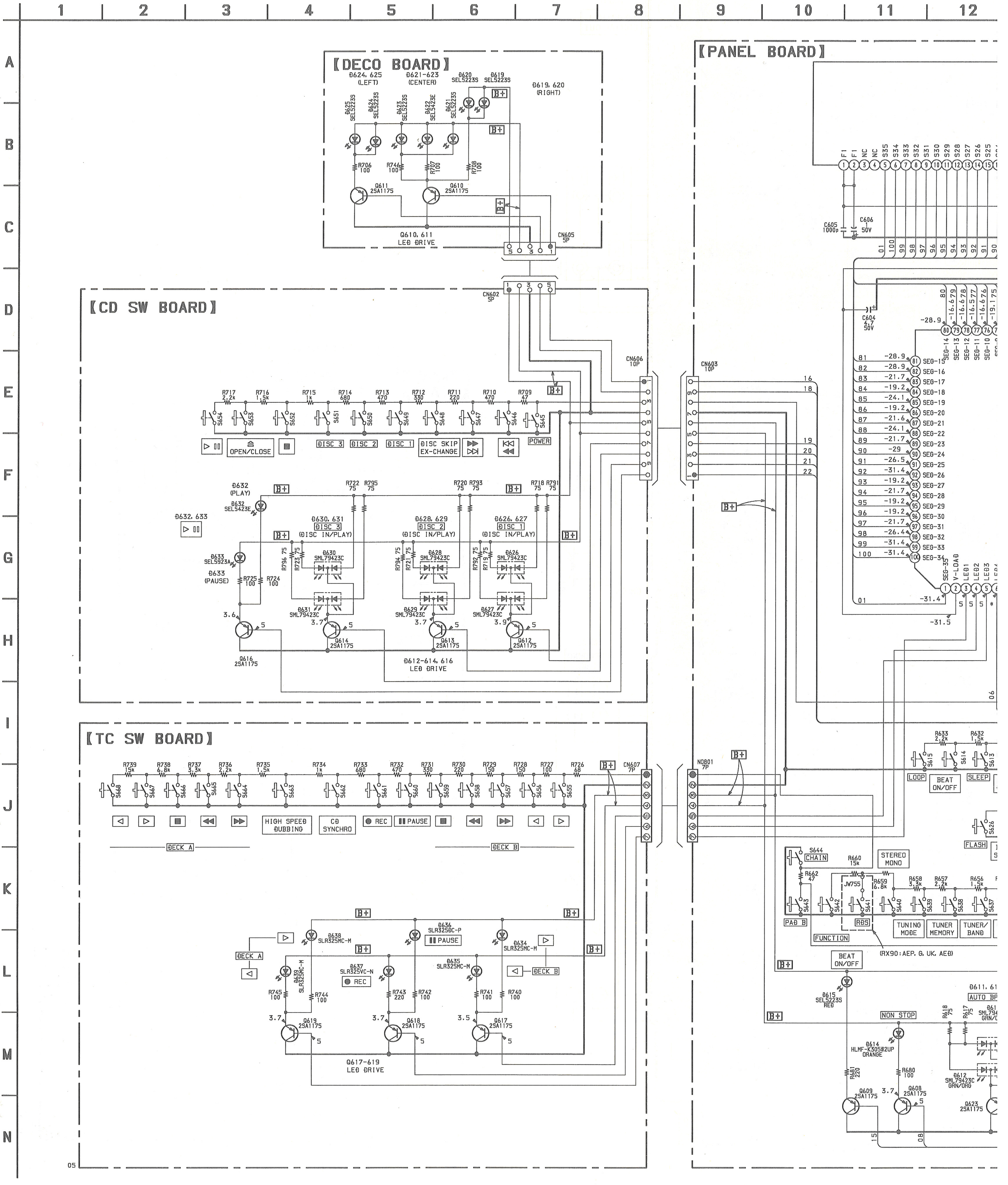
AED	: Nothern European model
AUS	: Australian model
EA3	: Saudi Arabia
EA4	: israeil model
EE	: East European model
E2	: 120V AC Area in E model
E3	: 240V AC Area in E model
G	: German model
HK	: Hong Kong model
IA	: Indonesia model
JE	: Tourist model
MX	: Mexican model
MY	: Malaysia model
SAF	: South African model
SP	: Singapore model
TH	: Thailand model
TW	: Taiwan model

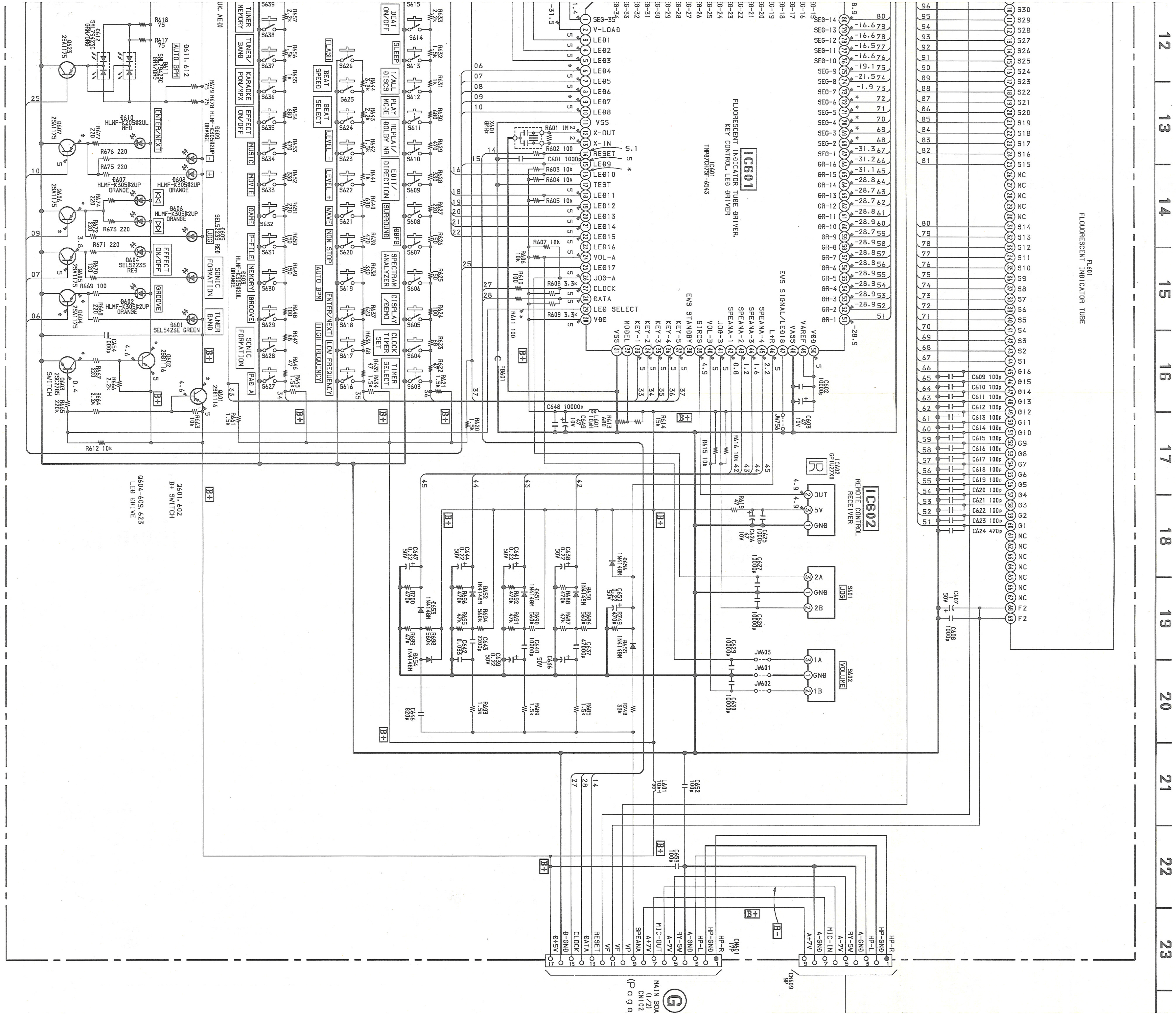


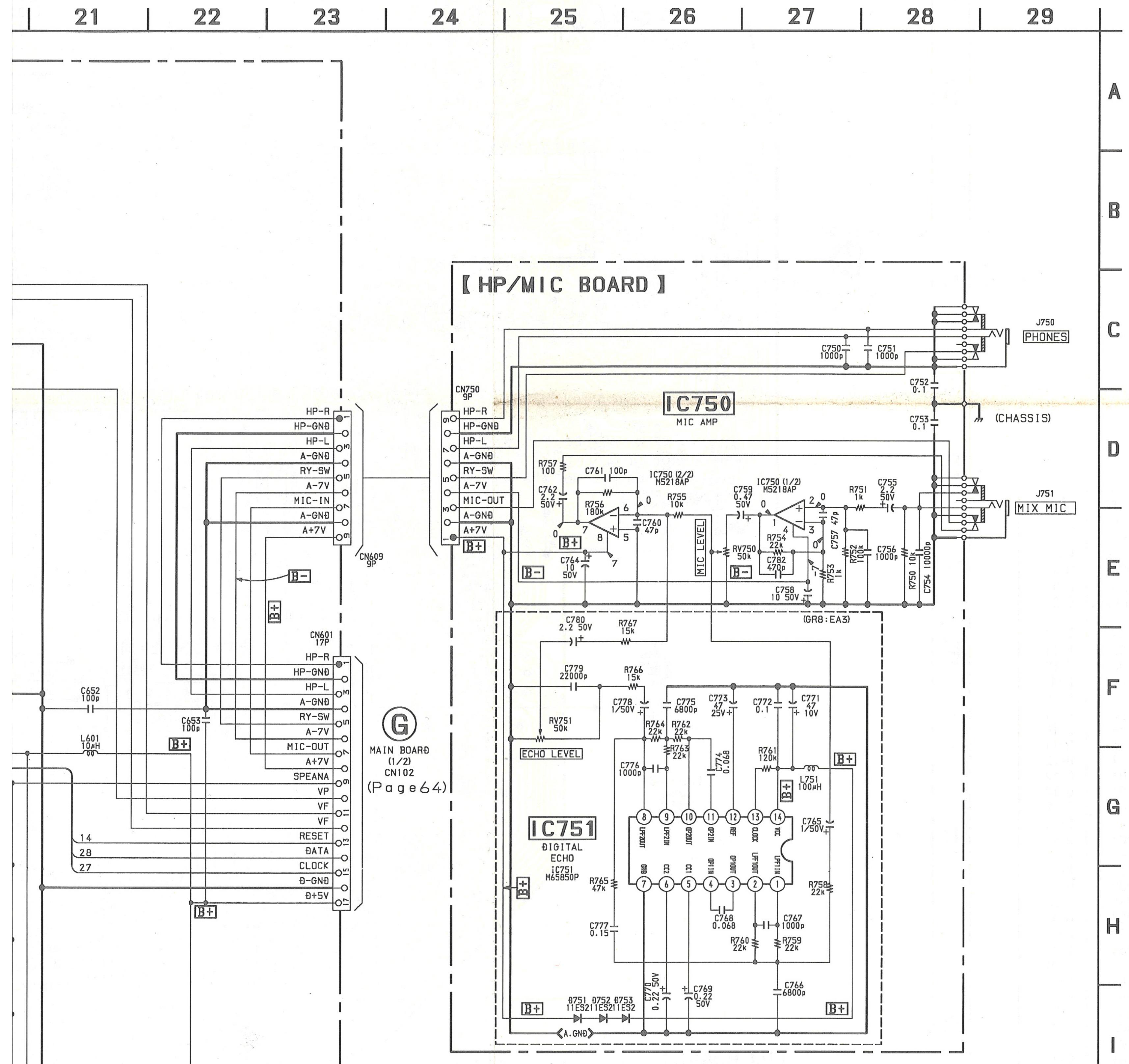
5
6
7
8
9
10
11
12
(Page 53)
F
MOTOR(SLIDE)BOARD
CN801
(Page 53)
E
CONNECTOR BOARD
CN701
(Page 50)
C
BD BOARD
CNU102
(Page 42)
A
FM/AM TUNER PACK (EXCEPT GR8 : JE/RX90)
TCB BOARD (GR8 : JE/RX90)
CN1
FM/AM TUNER PACK IS SUPPLI
AS THE ASSEMBLED BLOCK
(EXCEPT:GR8,EA4,TH,AUS, E2,MX/RX90
(EXCEPT GR8:EA4 TH,AUS,E2,MX (RX90:AEP,UK,G,AED)
(RX90:AEP,UK,G,AED)
(RX90: EE,CIS)
(RX90:AEP,G,UK,AED)
(EXCEPT AEP,UK,G,AED)
IC301
IC201
CN202
CN203
CN204
CN201
CN103
CN101
CN109
RX90
GR8
(CHASSIS)
POWER AMP BOARD
CN801
H
(Page 79)
1-663-9


11
12
13
14
15
16
17
(EXCEPT GR8 : JE/RX90)
(GR8 : JE/RX90)
CN1
FM/AM TUNER PACK IS SUPPLIED AS THE ASSEMBLED BLOCK
IC391
CD OPTICAL DIGITAL OUT
J101
VIDEO/MD
IN
OUT
R
L
J241
SUPER WOOFER
CN105
M901
TM132
SURROUND SPEAKER
TM131
SPEAKER
RX90
GR8
1-663-999-
12
(12)
TRANS BOARD
GR8 : EA3, E2, E3, SP, HK, IA, JE, TW
S901
VOLTAGE SELECTOR
220-240V ←→ 110-120V
CN903
AC IN
JW901
JW902
JW903
(GR8 : MY, AUS, TH, EA4, SAF/ RX90
(GR8 : MX)
F902
FH952
FH902
(GR8 : EA3, E2, E3, SP, HK, JE, IA, TW, MX)
F901
FH951
FH901
(EXCEPT GR8 : MX)
JW907
JW908
JW909
JW910
JW911
R901
R902
R903
R904
CN901
CN902
LP901
1-664-026-
11
(11)
POWER AMP BOARD
CN802
(Page 79)

6-11. SCHEMATIC DIAGRAM – PANEL Section – • See page 82 for IC Block Diagrams.


【DECO BOARD】
D624, 625 (LEFT)
D621-623 (CENTER)
D619, 620 (RIGHT)
Q610, 611 LED DRIVE
CN605 5P
CN602 5P
【CD SW BOARD】
CN606 10P
OPEN/CLOSE
DISC 3
DISC 2
DISC 1
DISC SKIP EX-CHANGE
POWER
D632 (PLAY)
D633 (PAUSE)
D630, 631 DISC 3 (DISC IN/PLAY)
D628, 629 DISC 2 (DISC IN/PLAY)
D626, 627 DISC 1 (DISC IN/PLAY)
D612-614, 616 LED DRIVE
【TC SW BOARD】
CN607 7P
HIGH SPEED DUBBING
CD SYNCHRO
REC
PAUSE
DECK A
DECK B
Q617-619 LED DRIVE
【PANEL BOARD】
CN603 10P
NO801 7P
LOOP
BEAT ON/OFF
SLEEP
FLASH
CHAIN
STEREO MONO
PAD B
RDS
FUNCTION
TUNING MODE
TUNER MEMORY
TUNER/BAND
(RX90:AEP, G, UK, AED)
NON STOP
AUTO BP
D614 HLMF-K305#2UP ORANGE
D615 SEL5223S RED
D612 SML79423C GRN/ORG
V-LOAD
LED1
LED2
LED3
SEG-14
SEG-15
SEG-35


IC601
FLUORESCENT INDICATOR TUBE DRIVER, KEY CONTROL, LED DRIVER
IC601 TMP87CH75F-6543
IC602
REMOTE CONTROL RECEIVER
IC602 GP1U27XB
FL601
FLUORESCENT INDICATOR TUBE
SEG-35
V-LOAD
LED1
LED2
LED3
LED4
LED5
LED6
LED7
LED8
VSS
X-OUT
X-IN
RESET
LED9
LED10
TEST
LED11
LED12
LED13
LED14
LED15
LED16
VOL-A
LED17
JOG-A
CLOCK
DATA
LED SELECT
VDD
MODEL
KEY-1
KEY-2
KEY-3
KEY-4
KEY-5
EWS STANDBY
SIRCS
VOL-B
JOG-B
SPEANA-1
SPEANA-2
SPEANA-3
SPEANA-4
L+R
EWS SIGNAL/LED18
VASS
VAREF
X601 8MHz
ENTER/NEXT
JOG
EFFECT ON/OFF
SONIC FORMATION
GROOVE
TUNER BAND
TUNER MEMORY
TUNER/BAND
KARAOKE PON/MPX
EFFECT ON/OFF
MUSIC
MOVIE
GAME
P-FILE
MEMORY
GROOVE
SONIC FORMATION
PAD A
FLASH
BEAT SPEED
BEAT SELECT
LEVEL –
LEVEL +
WAVE
NON STOP
AUTO BPM
ENTER/NEXT
LOW FREQUENCY
HIGH FREQUENCY
BEAT ON/OFF
SLEEP
1/ALL DISCS
PLAY MODE
REPEAT/DOLBY NR
EDIT/DIRECTION
SURROUND
DBFB
SPECTRAM ANALYZER
DISPLAY /DEMO
CLOCK TIMER SET
TIMER SELECT
Q601, 602 B+ SWITCH
Q604-609, 623 LED DRIVE
UK, AED
S601 JOG
S602 VOLUME
OUT
5V
GND
2A
2B
1A
1B
JW601
JW602
JW603
CN601 17P
CN609 9P
D-+5V
D-GND
CLOCK
DATA
RESET
VF
VF
VP
SPEANA
A+7V
MIC-OUT
A-7V
RY-SW
A-GND
HP-L
HP-GND
HP-R
A+7V
A-GND
MIC-IN
A-7V
RY-SW
A-GND
HP-L
HP-GND
HP-R
G
MAIN BOARD (1/2) CN102 (Page
B+
B–
12
13
14
15
16
17
18
19
20
21
22
23

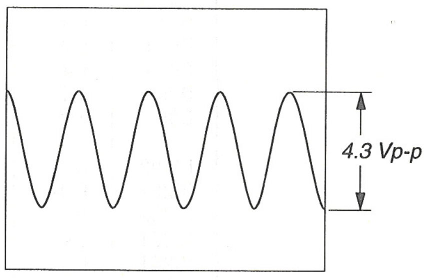

21
22
23
24
25
26
27
28
29
A
B
C
D
E
F
G
H
I
J
【HP/MIC BOARD】
IC750
MIC AMP
IC750 (2/2)
M5218AP
IC750 (1/2)
M5218AP
IC751
DIGITAL
ECHO
IC751
M65850P
CN750
9P
CN609
9P
CN601
17P
HP-R
HP-GND
HP-L
A-GND
RY-SW
A-7V
MIC-IN
MIC-OUT
A+7V
SPEANA
VP
VF
RESET
DATA
CLOCK
D-GND
D+5V
14
28
27
G
MAIN BOARD
(1/2)
CN102
(Page64)
J750
PHONES
J751
MIX MIC
(CHASSIS)
MIC LEVEL
ECHO LEVEL
(GR8:EA3)
A.GND
B+
B-
C652
100p
L601
10μH
C653
100p
C750
1000p
C751
1000p
C752
0.1
C753
0.1
R757
100
C761 100p
C762
2.2
50V
R756
180k
C760
47p
R755
10k
C764
10
50V
C759
0.47
50V
R754
22k
C782
470p
RV750
50k
R751
1k
C755
2.2
50V
C757 47p
R753
1k
R752
100k
C756
1000p
R750 10k
C754 10000p
C758
10 50V
C780
2.2 50V
R767
15k
C779
22000p
R766
15k
RV751
50k
C778
1/50V
C775
6800p
C773
47
25V
C772
0.1
C771
47
10V
R764
22k
R762
22k
R763
22k
C776
1000p
C774
0.068
R761
120k
L751
100μH
C765
1/50V
LPF2OUT
LPF2IN
OP2OUT
OP2IN
REF
CLOCK
VCC
GND
CC2
CC1
OP1IN
OP1OUT
LPF1OUT
LPF1IN
R765
47k
R758
22k
C777
0.15
C768
0.068
C767
1000p
R760
22k
R759
22k
C770
0.22 50V
C769
0.22
50V
C766
6800p
D751 D752 D753
11ES2 11ES2 11ES2

Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¹/₄ W or less unless otherwise specified.
- △ : internal component.
- B+ : B+ Line.
- B– : B- Line.
- ▭ : panel designation.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark :FM
  * : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Abbreviation
  AED : Northern European model
  EA3 : Saudi Arabia model
  EE : East European model
  G : German model

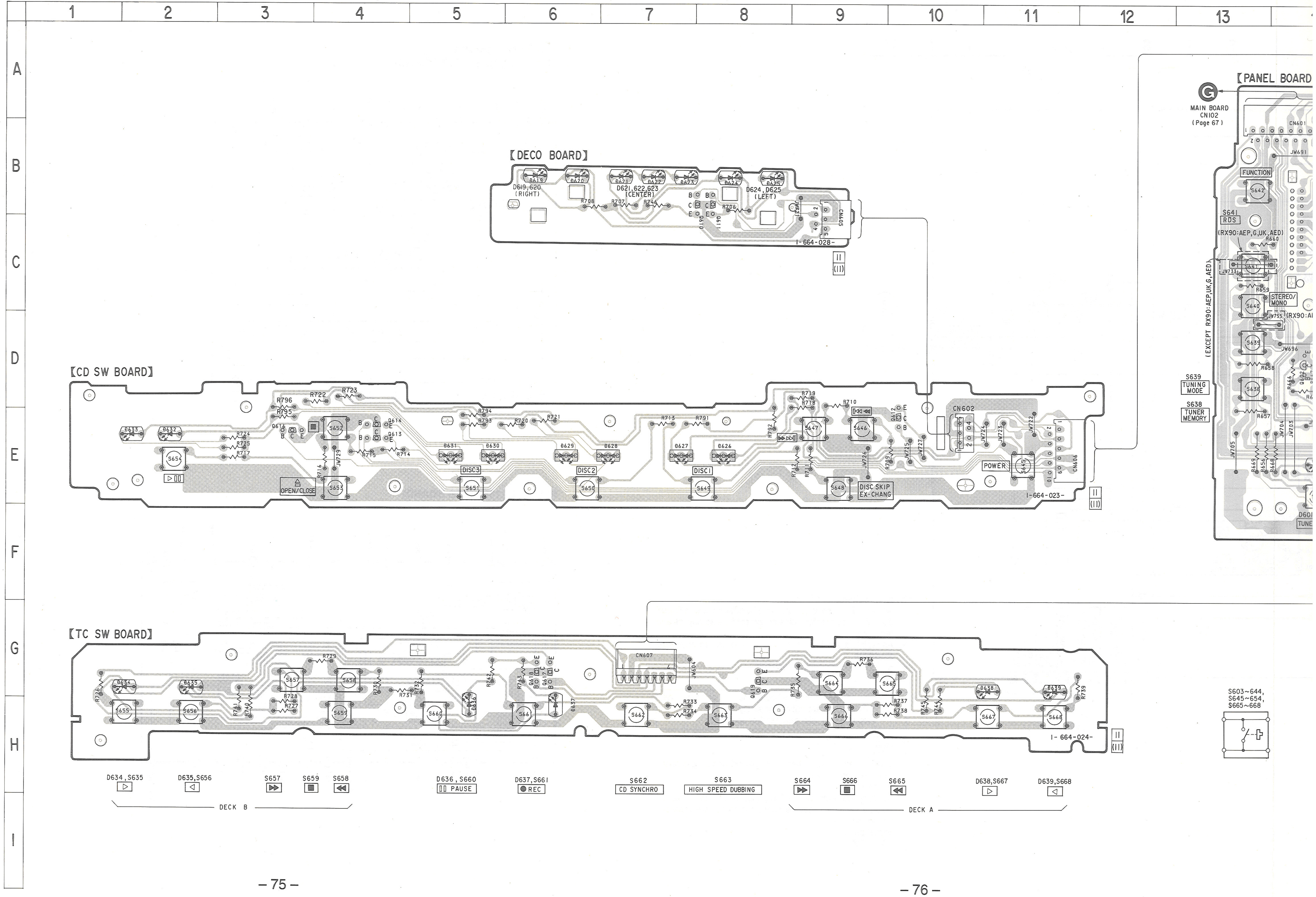
- **Waveform**

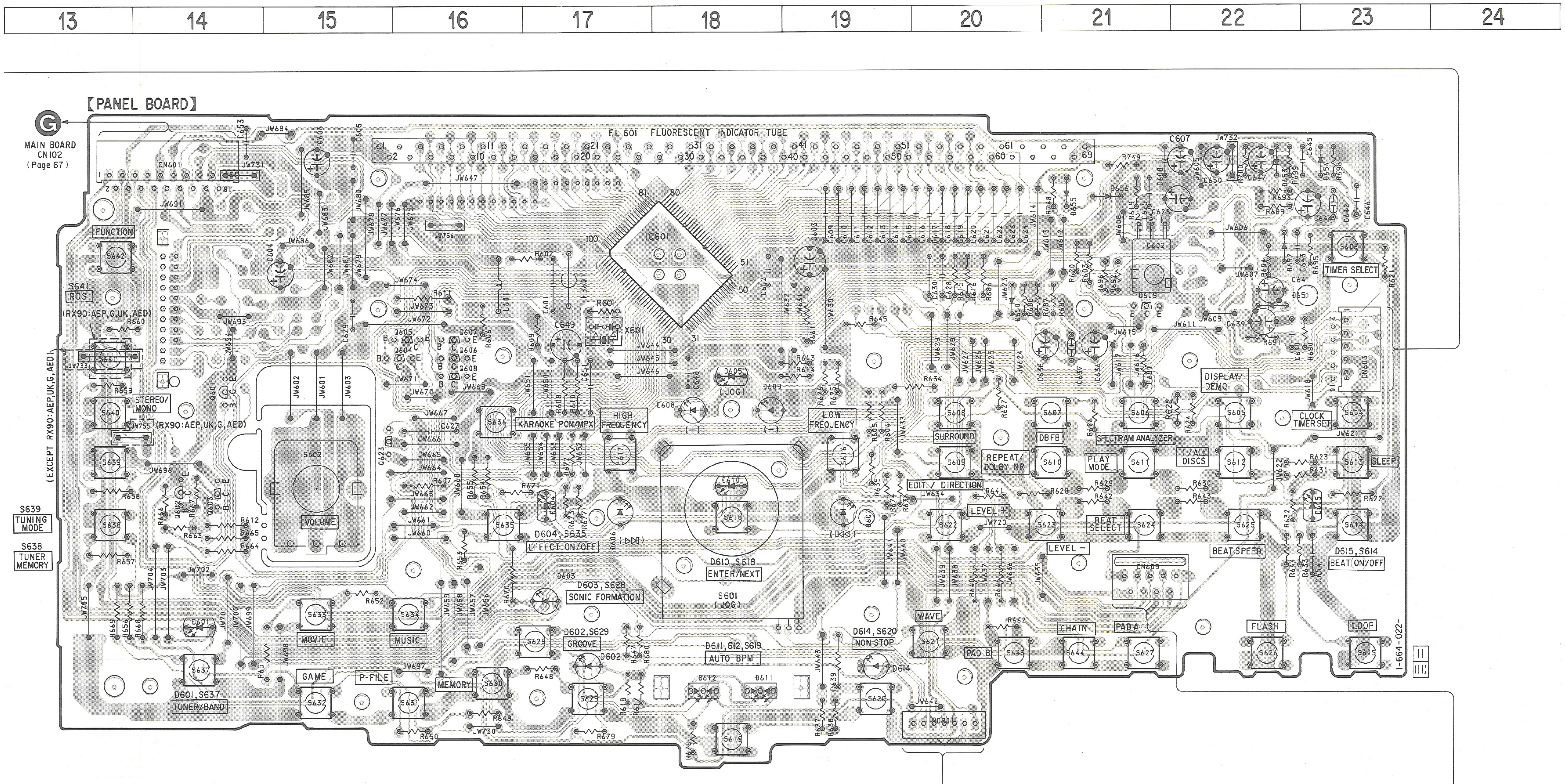
① IC601 ⑫

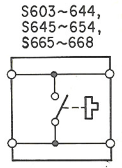


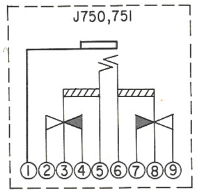
8 MHz

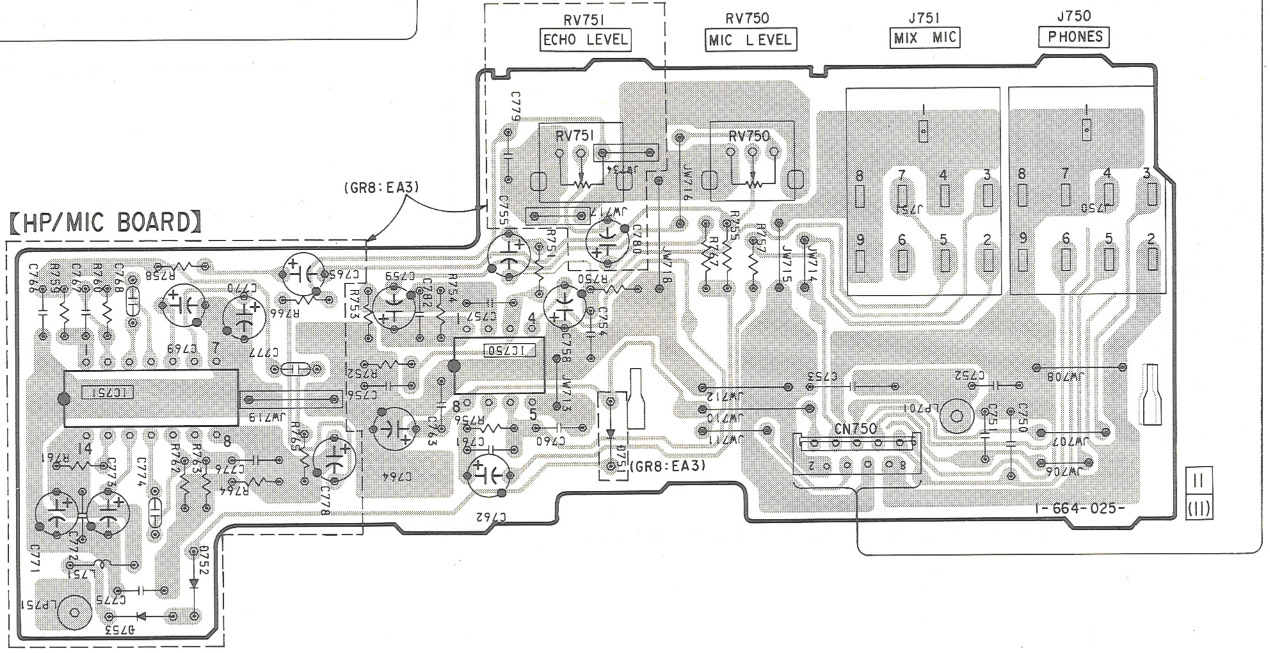
6-12. PRINTED WIRING BOARDS – PANEL Section – • See page 41 for Circuit Boards Location.


1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
H
I
【DECO BOARD】
D619,620 (RIGHT)
D621,622,623 (CENTER)
D624,D625 (LEFT)
R708
R707
R746
R706
Q610
Q611
CN605
1-664-028-
11 (11)
【CD SW BOARD】
R796
R722
R723
R795
R724
R725
R717
Q614
Q613
Q616
R715
R714
R794
R793
R720
R721
R713
R791
R719
R718
R710
R792
R712
R709
CN602
JW724
JW723
JW722
JW725
JW727
JW726
JW729
D633
D632
D631
D630
D629
D628
D627
D626
S654
▷ ▯▯
S652
S653
△ OPEN/CLOSE
S651
DISC3
S650
DISC2
S649
DISC1
S647
S646
S648
DISC SKIP EX-CHANG
POWER
S645
CN606
1-664-023-
11 (11)
【TC SW BOARD】
R729
R726
R741
R740
R728
R727
R730
R731
R732
R742
R743
Q618
Q617
Q619
CN607
JW604
R733
R734
R735
R736
R737
R738
R745
R744
R739
D634
D635
D636
D637
D638
D639
S655
S656
S657
S658
S659
S660
S661
S662
S663
S664
S665
S666
S667
S668
1-664-024-
11 (11)
D634,S635
▷
D635,S656
◁
S657
▶▶
S659
■
S658
◀◀
DECK B
D636,S660
▯▯ PAUSE
D637,S661
● REC
S662
CD SYNCHRO
S663
HIGH SPEED DUBBING
S664
▶▶
S666
■
S665
◀◀
DECK A
D638,S667
▷
D639,S668
◁
【PANEL BOARD
G
MAIN BOARD CN102 (Page 67)
CN601
JW691
FUNCTION
S642
S641 RDS
(RX90:AEP,G,UK,AED)
R660
JW733
R659
STEREO/MONO
S640
JW755 (RX90:AE
(EXCEPT RX90:AEP,UK,G,AED)
S639
JW696
R658
S639 TUNING MODE
S638 TUNER MEMORY
S638
R657
R666
JW706
JW703
JW705
R669
R656
R668
D601
TUNE
S603~644,
S645~654,
S665~668


13
14
15
16
17
18
19
20
21
22
23
24
【PANEL BOARD】
G
MAIN BOARD
CN102
(Page 67)
FL601 FLUORESCENT INDICATOR TUBE
IC601
IC602
CN601
CN603
CN609
FUNCTION
S641 RDS
(RX90:AEP,G,UK,AED)
STEREO/MONO
(RX90:AEP,UK,G,AED)
(EXCEPT RX90:AEP,UK,G,AED)
S639 TUNING MODE
S638 TUNER MEMORY
VOLUME
S602
KARAOKE PON/MPX
HIGH FREQUENCY
EFFECT ON/OFF
D604, S635
D603, S628
SONIC FORMATION
D602, S629
GROOVE
MOVIE
MUSIC
GAME
P-FILE
MEMORY
D601, S637
TUNER/BAND
(JOG)
D610, S618
ENTER/NEXT
S601
(JOG)
D611, 612, S619
AUTO BPM
LOW FREQUENCY
SURROUND
DBFB
SPECTRAM ANALYZER
REPEAT/ DOLBY NR
PLAY MODE
1/ALL DISCS
EDIT / DIRECTION
LEVEL +
LEVEL -
BEAT SELECT
BEAT SPEED
D614, S620
NON STOP
WAVE
PAD B
CHAIN
PAD A
FLASH
LOOP
D615, S614
BEAT ON/OFF
DISPLAY/ DEMO
CLOCK TIMER SET
SLEEP
TIMER SELECT
1-664-022-
11
(11)


S603~644,
S645~654,
S665~668


J750,751
①②③④⑤⑥⑦⑧⑨


【HP/MIC BOARD】
(GR8:EA3)
RV751
ECHO LEVEL
RV750
MIC LEVEL
J751
MIX MIC
J750
PHONES
IC751
IC750
CN750
(GR8:EA3)
1-664-025-
11
(11)

• **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D601	E-14	D650	C-20
D602	E-17	D651	C-22
D603	E-17	D652	B-22
D604	D-17	D653	B-22
D605	C-18	D654	B-23
D606	D-17	D655	B-21
D607	D-19	D656	B-21
D608	C-18	D751	H-21
D609	C-18	D752	I-19
D610	D-18	D753	I-18
D611	F-18		
D612	F-18	IC601	B-18
D614	E-19	IC602	B-21
D615	D-23	IC750	H-20
D619	B-6	IC751	H-18
D620	B-6		
D621	B-7	Q601	C-14
D622	B-7	Q602	D-14
D623	B-7	Q603	D-14
D624	B-8	Q604	C-16
D625	B-8	Q605	C-16
D626	E-8	Q606	C-16
D627	E-7	Q607	C-16
D628	E-7	Q608	C-16
D629	E-6	Q609	C-21
D630	E-5	Q610	B-8
D631	E-5	Q611	B-8
D632	E-2	Q612	E-10
D633	E-2	Q613	E-4
D634	G-2	Q614	E-4
D635	G-2	Q616	E-3
D636	H-5	Q617	G-6
D637	H-6	Q618	G-6
D638	G-11	Q619	G-8
D639	G-11	Q623	D-15

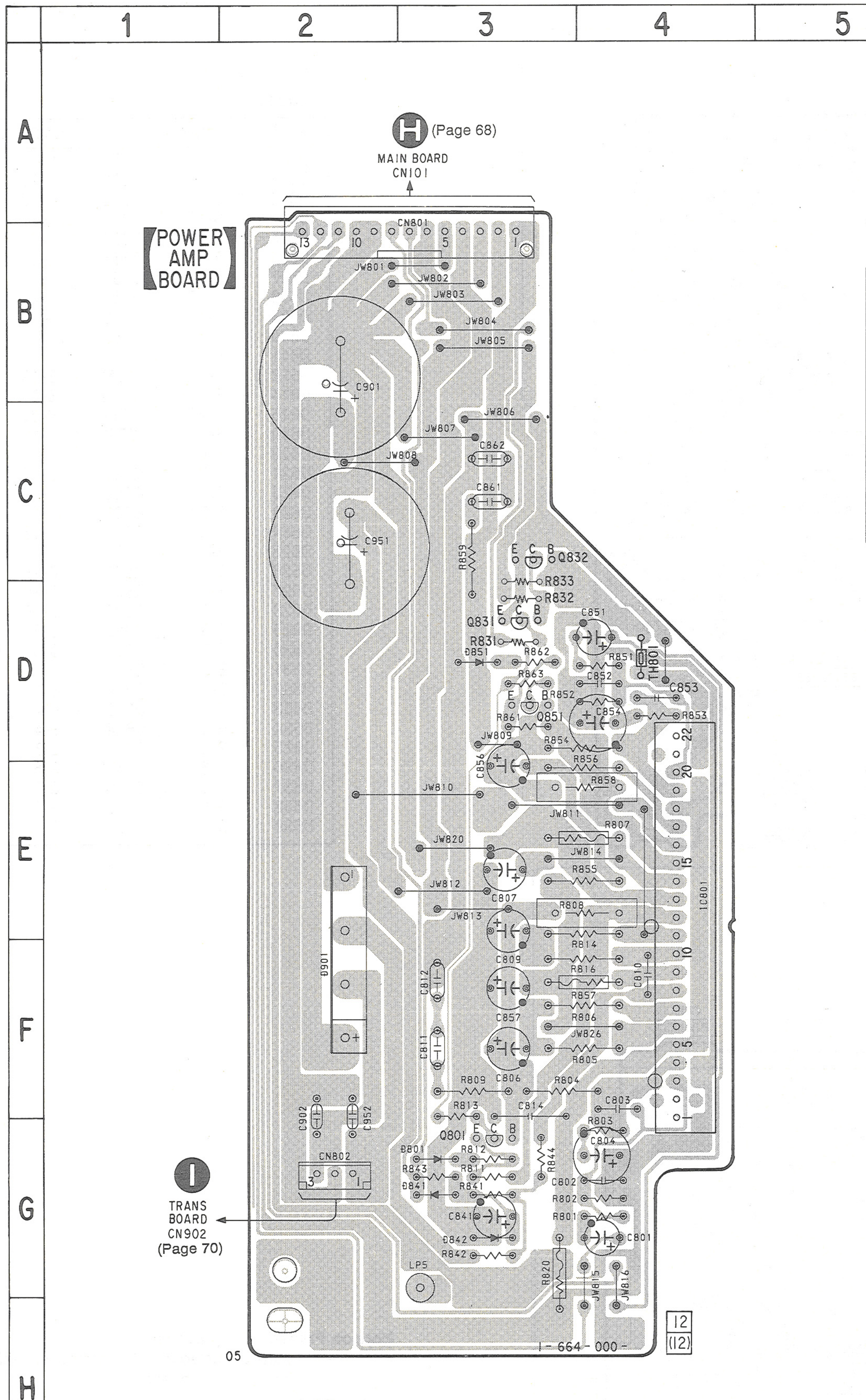
Note on Printed Wiring Board:

- ○—— : parts extracted from the component side.
- △ : internal component.
- Abbreviation

AED : Northern European model
EA3 : Saudi Arabia model
EE : East European model
G : German model

6-13. PRINTED WIRING BOARD – POWER AMP Section –

- See page 41 for Circuit Boards Location.


1
2
3
4
5
A
B
C
D
E
F
G
H
H (Page 68)
MAIN BOARD
CN101
POWER AMP BOARD
CN801
C901
C951
JW801
JW802
JW803
JW804
JW805
JW806
JW807
JW808
C862
C861
R859
Q832
R833
R832
Q831
R831
D851
R862
R863
R851
TH801
C851
C852
C853
R853
Q851
R852
R861
C854
R854
JW809
C856
R856
R858
JW810
JW811
R807
JW814
JW820
R855
JW812
C807
JW813
R808
R814
C809
R816
D901
C812
C811
C810
C857
R857
R806
JW826
R805
R809
C806
R804
C803
R813
C814
R803
C804
Q801
R812
D801
R844
R843
R811
C802
D841
R841
R802
C841
R801
C801
C842
R842
R820
JW815
JW816
LPS
C902
C952
CN802
I
TRANS BOARD
CN902
(Page 70)
05
1-664-000-
12
(12)

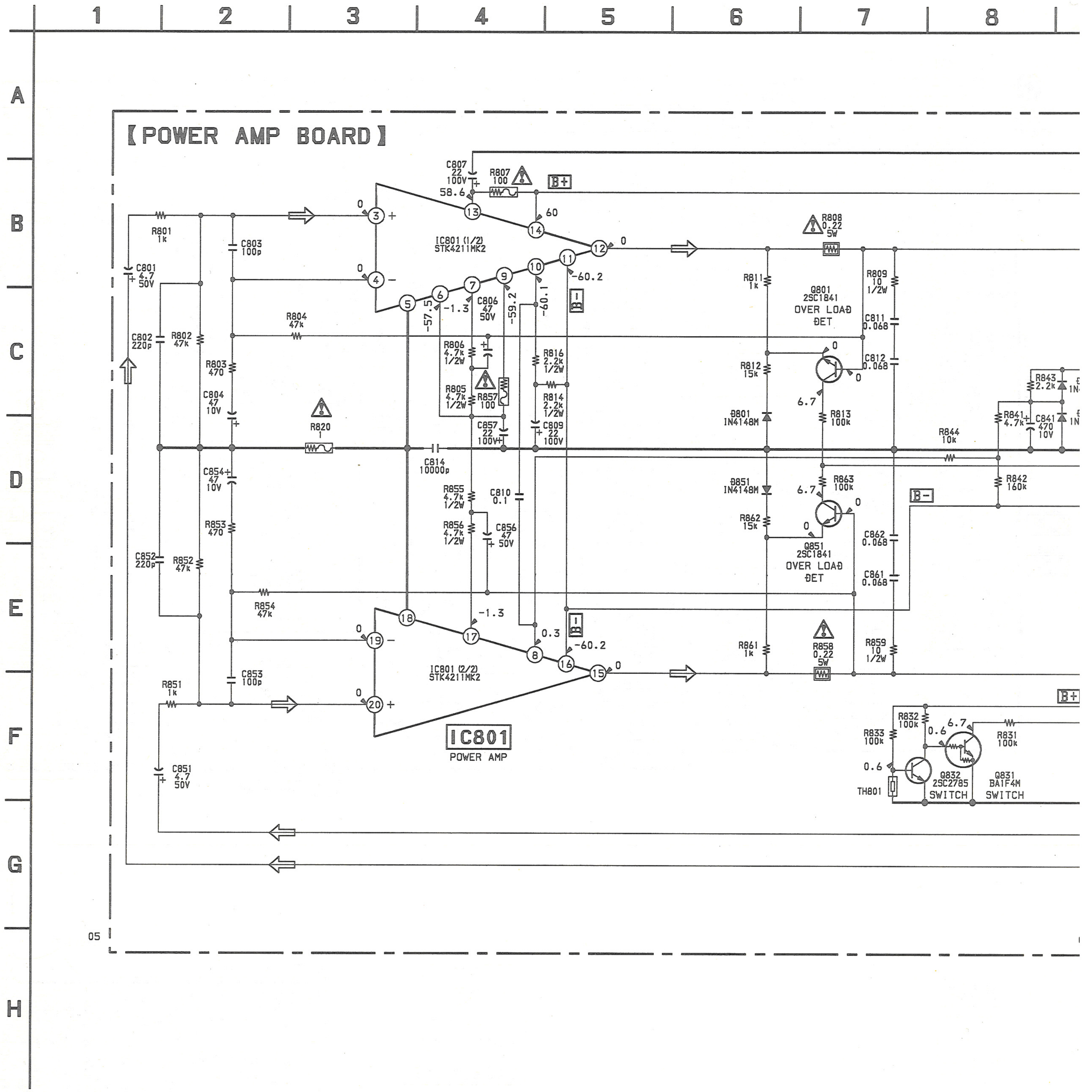
• Semiconductor Location

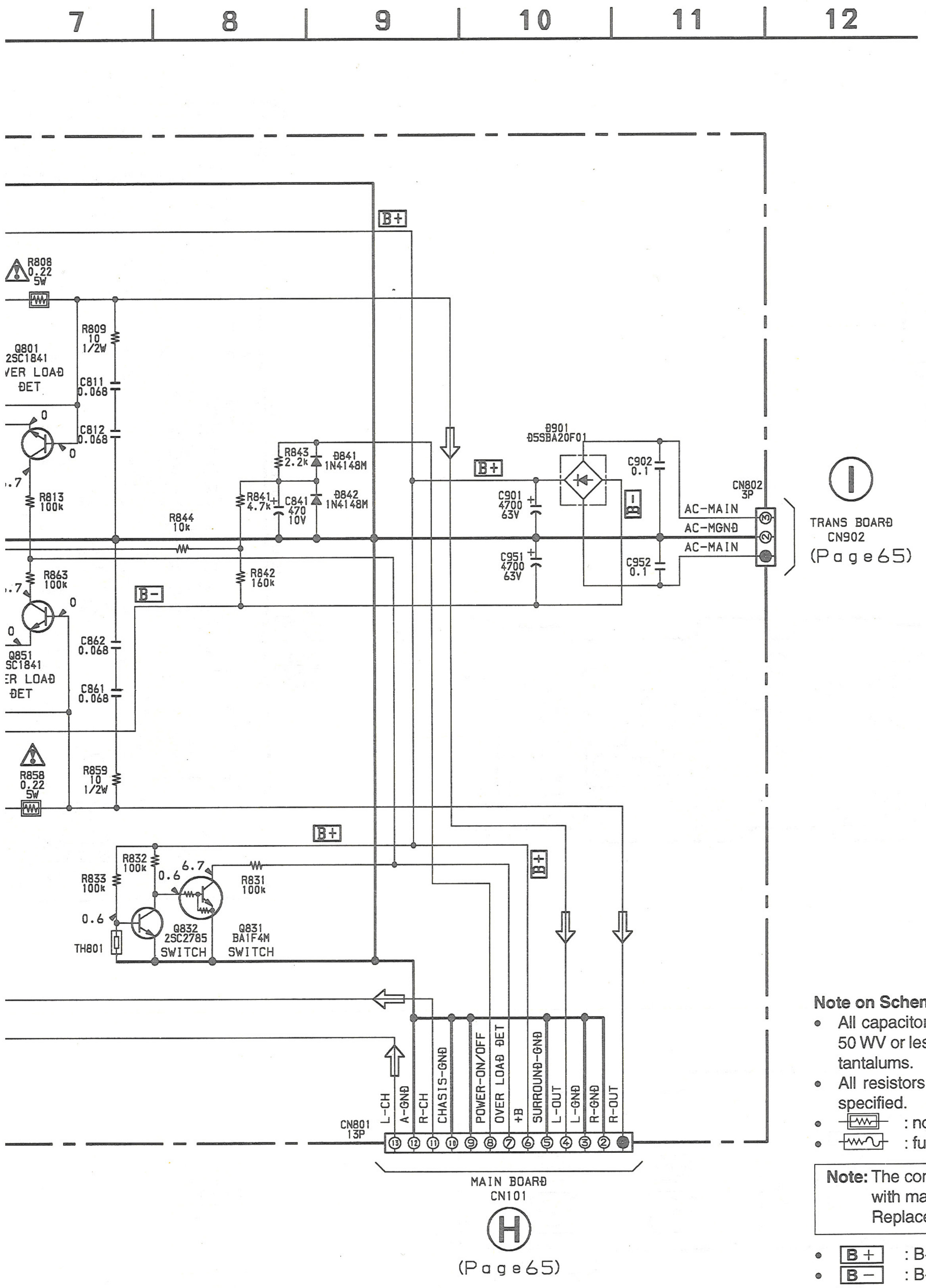
Ref. No.	Location
D801	G-3
D841	G-3
D842	G-3
D851	D-3
D901	F-2
IC801	E-4
Q801	G-3
Q831	D-3
Q832	C-3
Q851	D-3

Note on Printed Wiring Board:

- ○—— : parts extracted from the component side.

6-14. SCHEMATIC DIAGRAM – POWER AMP Section –


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
【POWER AMP BOARD】
C807 22 100V
R807 100
B+
58.6
60
IC801 (1/2) STK4211MK2
R801 1k
C801 4.7 50V
C803 100p
C802 220p
R802 47k
R803 470
C804 47 10V
R804 47k
R820 1
-57.5
-1.3
C806 47 50V
-59.2
-60.1
-60.2
R806 4.7k 1/2W
R805 4.7k 1/2W
R857 100
C857 22 100V
R816 2.2k 1/2W
R814 2.2k 1/2W
C809 22 100V
C814 10000p
B-
R811 1k
R812 15k
D801 1N4148M
Q801 2SC1841 OVER LOAD DET
6.7
R813 100k
R808 0.22 5W
R809 10 1/2W
C811 0.068
C812 0.068
R844 10k
R843 2.2k
R841 4.7k
C841 470 10V
R842 160k
C854 47 10V
R853 470
R855 4.7k 1/2W
C810 0.1
R856 4.7k 1/2W
C856 47 50V
D851 1N4148M
R862 15k
R863 100k
Q851 2SC1841 OVER LOAD DET
C862 0.068
C861 0.068
C852 220p
R852 47k
R854 47k
0.3
IC801 (2/2) STK4211MK2
R851 1k
C853 100p
C851 4.7 50V
R861 1k
R858 0.22 5W
R859 10 1/2W
IC801 POWER AMP
R832 100k
R833 100k
0.6
R831 100k
Q832 2SC2785 SWITCH
Q831 BA1F4M SWITCH
TH801
05


7
8
9
10
11
12
B+
R808 0.22 5W
R809 10 1/2W
Q801 2SC1841
VER LOAD DET
C811 0.068
C812 0.068
R813 100k
R844 10k
R843 2.2k
D841 1N4148M
R841 4.7k
C841 470 10V
D842 1N4148M
R842 160k
B-
D901 05SBA20F01
C901 4700 63V
C902 0.1
C951 4700 63V
C952 0.1
CN802 3P
AC-MAIN
AC-MGND
AC-MAIN
TRANS BOARD CN902
(Page65)
I
R863 100k
Q851 2SC1841
ER LOAD DET
C862 0.068
C861 0.068
R858 0.22 5W
R859 10 1/2W
R832 100k
R833 100k
R831 100k
Q832 2SC2785 SWITCH
Q831 BA1F4M SWITCH
TH801
CN801 13P
L-CH
A-GND
R-CH
CHASSIS-GND
POWER-ON/OFF
OVER LOAD DET
+B
SURROUND-GND
L-OUT
L-GND
R-GND
R-OUT
MAIN BOARD CN101
H
(Page65)

Note on Schematic Diagram:

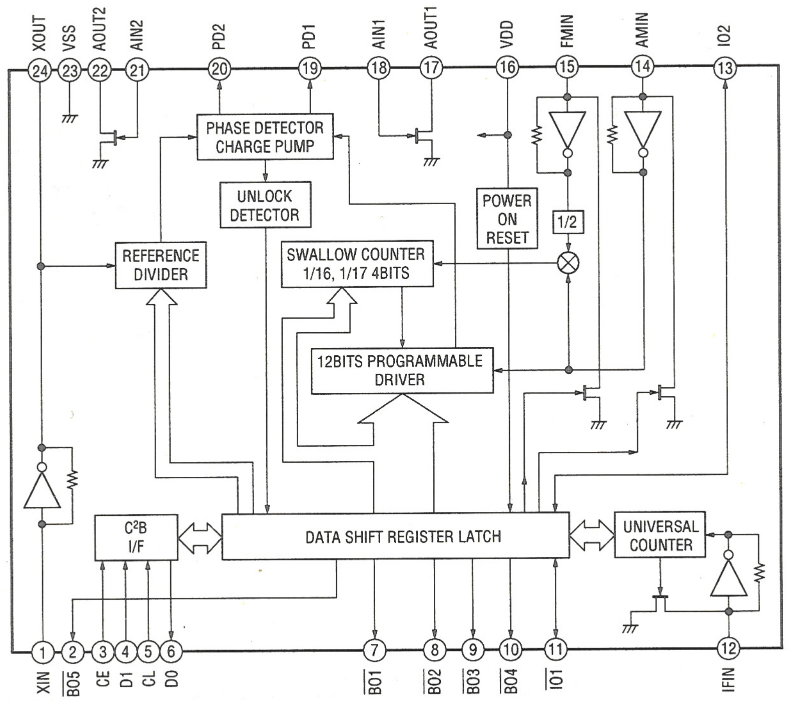
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $^1/_4$ W or less unless otherwise specified.
- ⊡ : nonflammable resistor.
- ⊡ : fusible resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

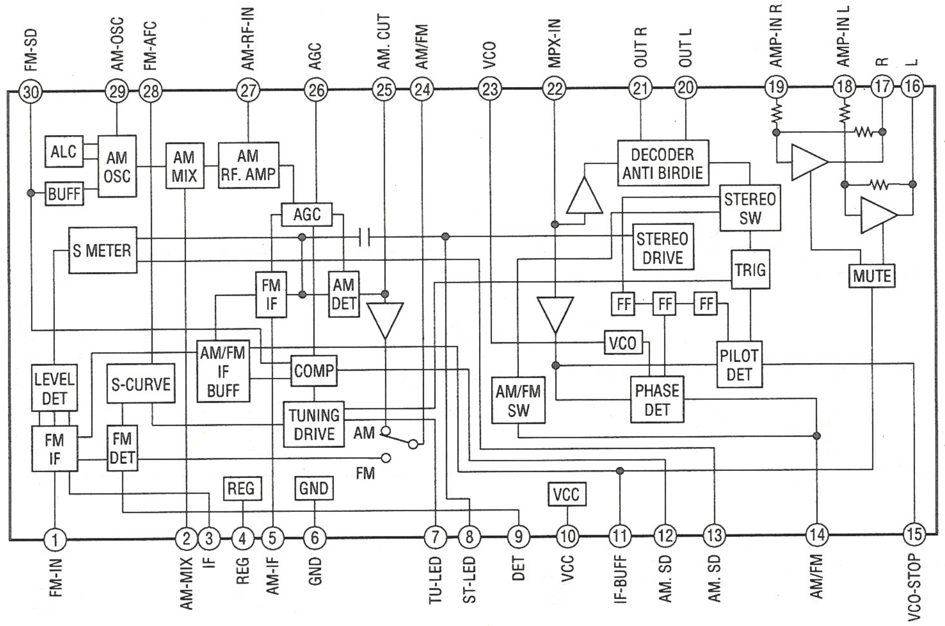
- B+ : B+ Line.
- B– : B- Line.
- Voltages are dc with respect to ground under no-signal (detuned) conditions.
  no mark :FM
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM

• IC Block Diagrams

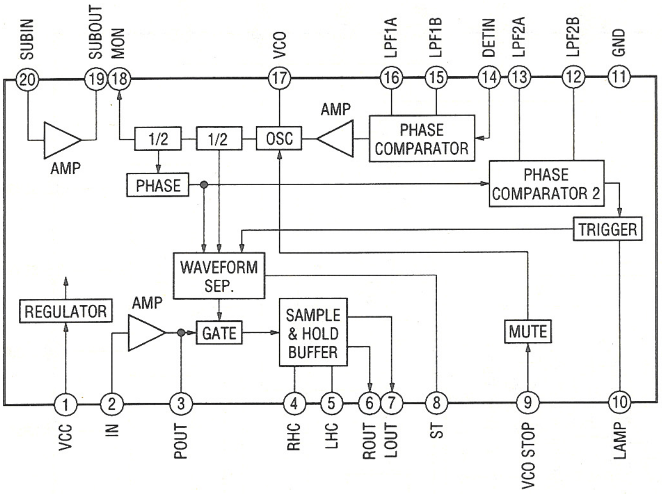
IC21 LC72130 (TCB BOARD)


XOUT
VSS
AOUT2
AIN2
PD2
PD1
AIN1
AOUT1
VDD
FMIN
AMIN
IO2
PHASE DETECTOR CHARGE PUMP
UNLOCK DETECTOR
POWER ON RESET
1/2
REFERENCE DIVIDER
SWALLOW COUNTER 1/16, 1/17 4BITS
12BITS PROGRAMMABLE DRIVER
C²B I/F
DATA SHIFT REGISTER LATCH
UNIVERSAL COUNTER
XIN
BO5
CE
DI
CL
DO
BO1
BO2
BO3
BO4
IO1
IFIN

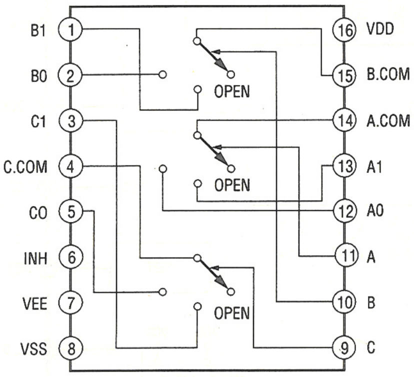
IC41 LA1835 (TCB BOARD)


FM-SD
AM-OSC
FM-AFC
AM-RF-IN
AGC
AM. CUT
AM/FM
VCO
MPX-IN
OUT R
OUT L
AMP-IN R
AMP-IN L
R
L
ALC
AM OSC
BUFF
AM MIX
AM RF. AMP
AGC
S METER
DECODER ANTI BIRDIE
STEREO SW
STEREO DRIVE
TRIG
MUTE
FM IF
AM DET
FF
VCO
PILOT DET
LEVEL DET
S-CURVE
AM/FM IF BUFF
COMP
AM/FM SW
PHASE DET
TUNING DRIVE
AM
FM
FM IF
FM DET
REG
GND
VCC
FM-IN
AM-MIX
IF
REG
AM-IF
GND
TU-LED
ST-LED
DET
VCC
IF-BUFF
AM. SD
AM. SD
AM/FM
VCO-STOP

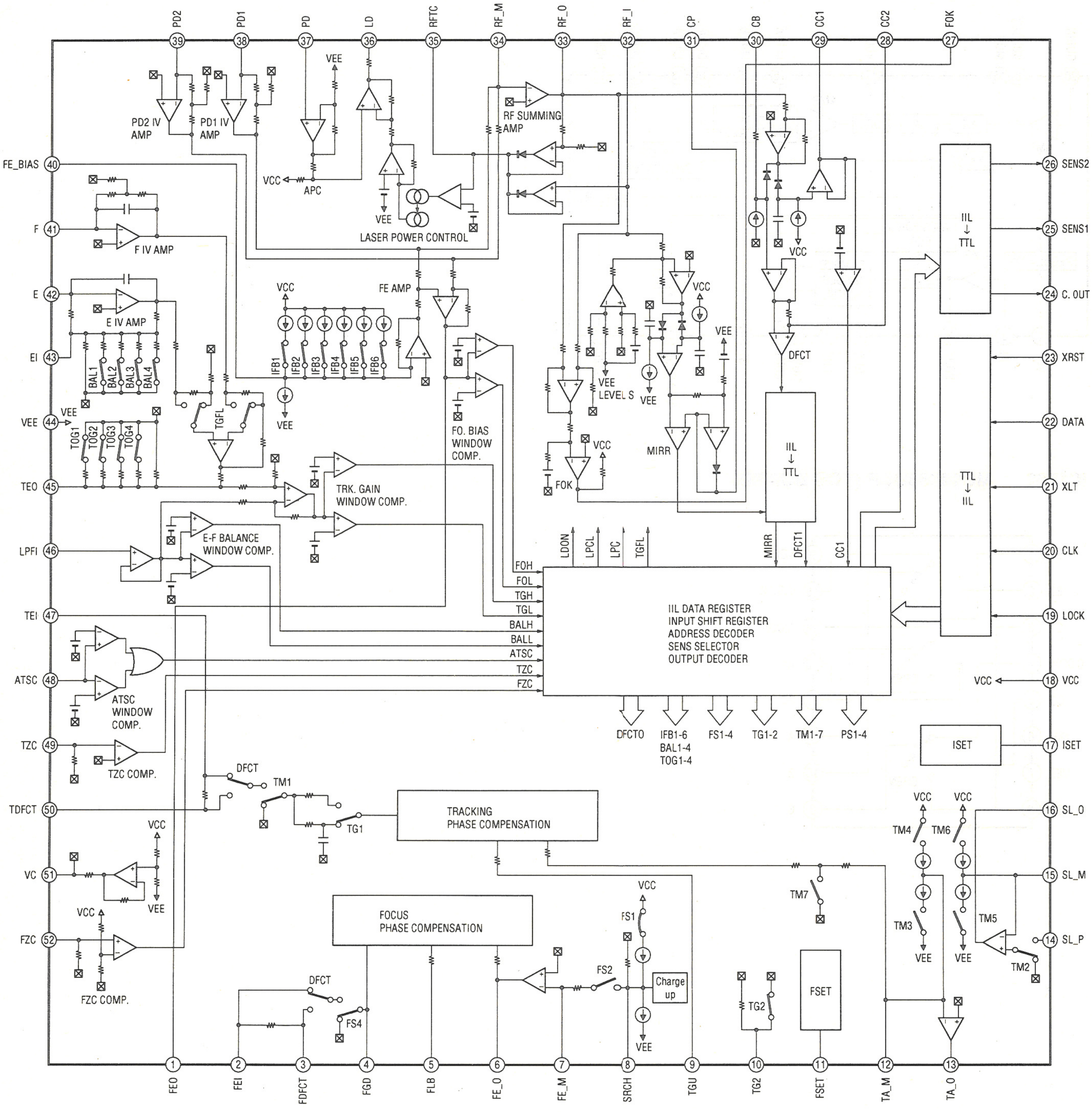
IC1701 IR3R42 (TCB BOARD)


SUBIN
SUBOUT
MON
VCO
LPF1A
LPF1B
DETIN
LPF2A
LPF2B
GND
20
19
18
17
16
15
14
13
12
11
AMP
1/2
1/2
OSC
AMP
PHASE COMPARATOR
PHASE
PHASE COMPARATOR 2
TRIGGER
WAVEFORM SEP.
REGULATOR
AMP
GATE
SAMPLE & HOLD BUFFER
MUTE
1
2
3
4
5
6
7
8
9
10
VCC
IN
POUT
RHC
LHC
ROUT
LOUT
ST
VCO STOP
LAMP

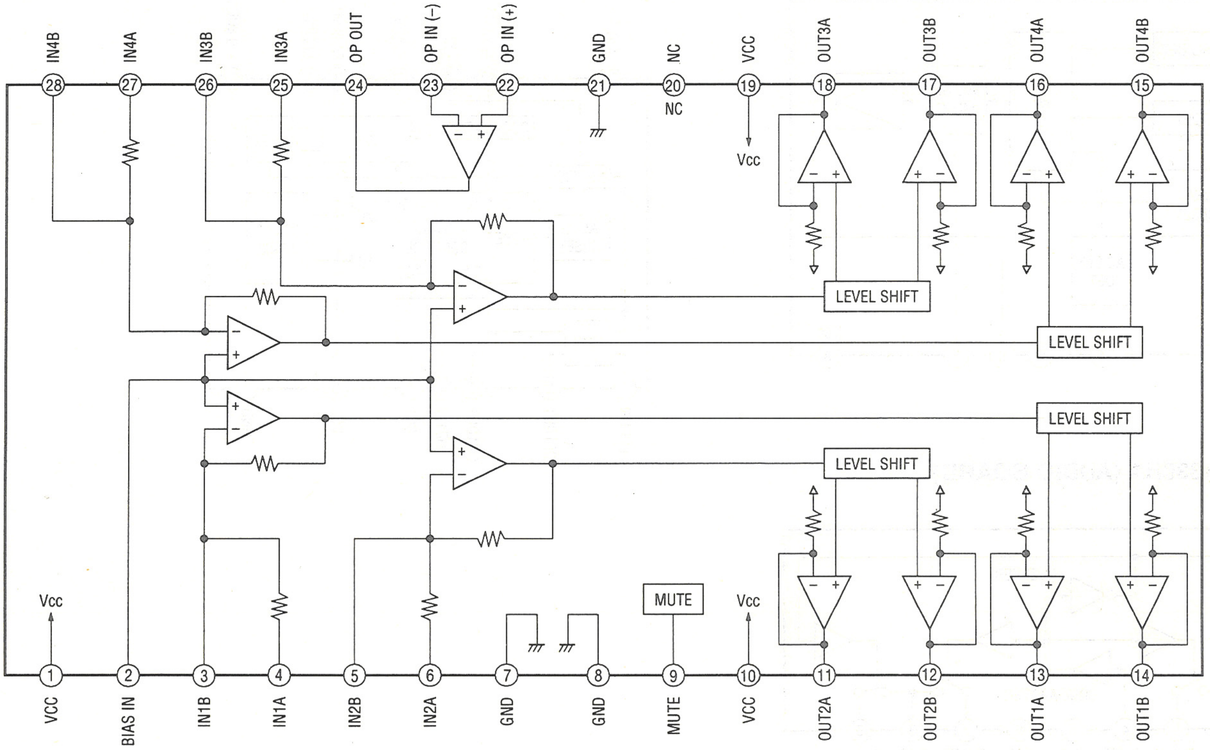
IC1702 MC14053BCP (TCB BOARD)


B1 1
B0 2
C1 3
C.COM 4
CO 5
INH 6
VEE 7
VSS 8
OPEN
OPEN
OPEN
16 VDD
15 B.COM
14 A.COM
13 A1
12 A0
11 A
10 B
9 C

IC101 CXA1992AR (BD BOARD)

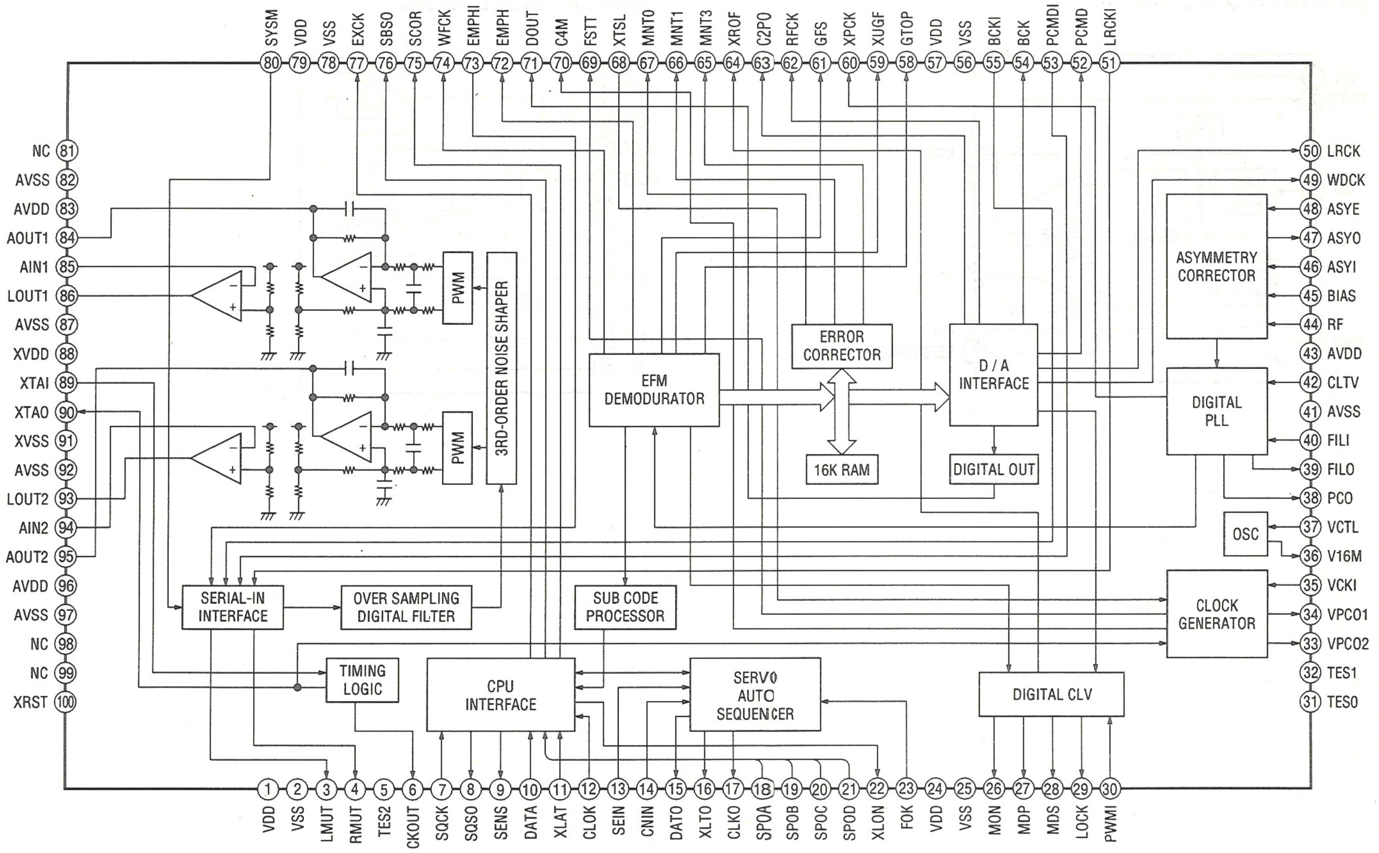

PD2
PD1
PD
LD
RFTC
RF_M
RF_O
RF_I
CP
CB
CC1
CC2
FOK
39
38
37
36
35
34
33
32
31
30
29
28
27
VEE
PD2 IV AMP
PD1 IV AMP
RF SUMMING AMP
VCC
APC
VEE
LASER POWER CONTROL
FE_BIAS 40
F 41
F IV AMP
E 42
E IV AMP
EI 43
BAL1
BAL2
BAL3
BAL4
VEE 44
VEE
TOG1
TOG2
TOG3
TOG4
TGFL
TEO 45
LPFI 46
TEI 47
ATSC 48
TZC 49
TDFCT 50
VC 51
FZC 52
VCC
IFB1
IFB2
IFB3
IFB4
IFB5
IFB6
FE AMP
FO. BIAS WINDOW COMP.
TRK. GAIN WINDOW COMP.
E-F BALANCE WINDOW COMP.
ATSC WINDOW COMP.
TZC COMP.
FZC COMP.
VEE LEVEL S
FOK
MIRR
DFCT
IIL ↓ TTL
TTL ↓ IIL
LDON
LPCL
LPC
TGFL
MIRR
DFCT1
CC1
FOH
FOL
TGH
TGL
BALH
BALL
ATSC
TZC
FZC
IIL DATA REGISTER
INPUT SHIFT REGISTER
ADDRESS DECODER
SENS SELECTOR
OUTPUT DECODER
DFCTO
IFB1-6
BAL1-4
TOG1-4
FS1-4
TG1-2
TM1-7
PS1-4
26 SENS2
25 SENS1
24 C. OUT
23 XRST
22 DATA
21 XLT
20 CLK
19 LOCK
18 VCC
17 ISET
16 SL_O
15 SL_M
14 SL_P
ISET
DFCT
TM1
TG1
TRACKING PHASE COMPENSATION
FOCUS PHASE COMPENSATION
DFCT
FS4
FS1
FS2
Charge up
TG2
FSET
TM7
TM4
TM6
TM3
TM5
TM2
1
2
3
4
5
6
7
8
9
10
11
12
13
FEO
FEI
FDFCT
FGD
FLB
FE_O
FE_M
SRCH
TGU
TG2
FSET
TA_M
TA_O

IC102 BA5941FP-E2 (BD BOARD)



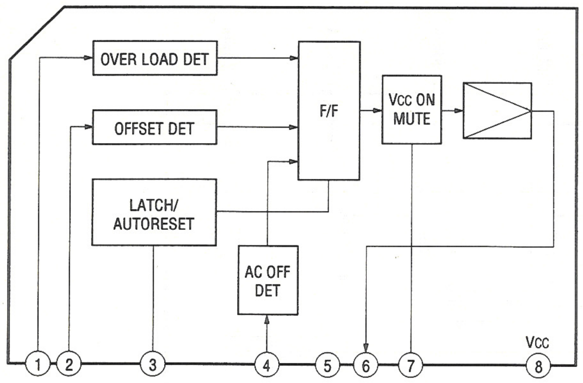
IN4B 28
IN4A 27
IN3B 26
IN3A 25
OP OUT 24
OP IN (−) 23
OP IN (+) 22
GND 21
NC 20
VCC 19
OUT3A 18
OUT3B 17
OUT4A 16
OUT4B 15
NC
Vcc
LEVEL SHIFT
LEVEL SHIFT
LEVEL SHIFT
LEVEL SHIFT
MUTE
Vcc
Vcc
1 VCC
2 BIAS IN
3 IN1B
4 IN1A
5 IN2B
6 IN2A
7 GND
8 GND
9 MUTE
10 VCC
11 OUT2A
12 OUT2B
13 OUT1A
14 OUT1B

IC103 CXD2519Q (BD BOARD)

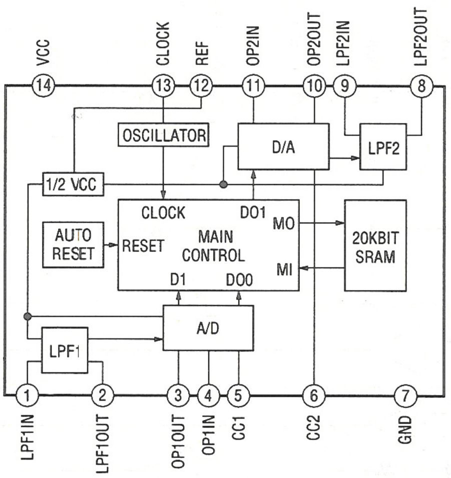


SYSM 80
VDD 79
VSS 78
EXCK 77
SBSO 76
SCOR 75
WFCK 74
EMPHI 73
EMPH 72
DOUT 71
C4M 70
FSTT 69
XTSL 68
MNT0 67
MNT1 66
MNT3 65
XROF 64
C2PO 63
RFCK 62
GFS 61
XPCK 60
XUGF 59
GTOP 58
VDD 57
VSS 56
BCKI 55
BCK 54
PCMDI 53
PCMD 52
LRCKI 51
NC 81
AVSS 82
AVDD 83
AOUT1 84
AIN1 85
LOUT1 86
AVSS 87
XVDD 88
XTAI 89
XTAO 90
XVSS 91
AVSS 92
LOUT2 93
AIN2 94
AOUT2 95
AVDD 96
AVSS 97
NC 98
NC 99
XRST 100
50 LRCK
49 WDCK
48 ASYE
47 ASYO
46 ASYI
45 BIAS
44 RF
43 AVDD
42 CLTV
41 AVSS
40 FILI
39 FILO
38 PCO
37 VCTL
36 V16M
35 VCKI
34 VPCO1
33 VPCO2
32 TES1
31 TESO
PWM
PWM
3RD-ORDER NOISE SHAPER
EFM DEMODURATOR
ERROR CORRECTOR
16K RAM
D / A INTERFACE
DIGITAL OUT
ASYMMETRY CORRECTOR
DIGITAL PLL
OSC
CLOCK GENERATOR
SERIAL-IN INTERFACE
OVER SAMPLING DIGITAL FILTER
SUB CODE PROCESSOR
TIMING LOGIC
CPU INTERFACE
SERVO AUTO SEQUENCER
DIGITAL CLV
1 VDD
2 VSS
3 LMUT
4 RMUT
5 TES2
6 CKOUT
7 SQCK
8 SQSO
9 SENS
10 DATA
11 XLAT
12 CLOK
13 SEIN
14 CNIN
15 DATO
16 XLTO
17 CLKO
18 SPOA
19 SPOB
20 SPOC
21 SPOD
22 XLON
23 FOK
24 VDD
25 VSS
26 MON
27 MDP
28 MDS
29 LOCK
30 PWMI

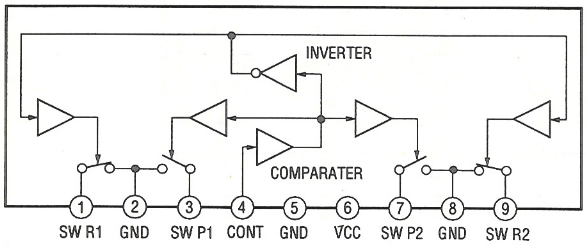
IC281 μPC1237HA (MAIN BOARD)


OVER LOAD DET
OFFSET DET
LATCH/ AUTORESET
F/F
AC OFF DET
Vcc ON MUTE
Vcc
1
2
3
4
5
6
7
8

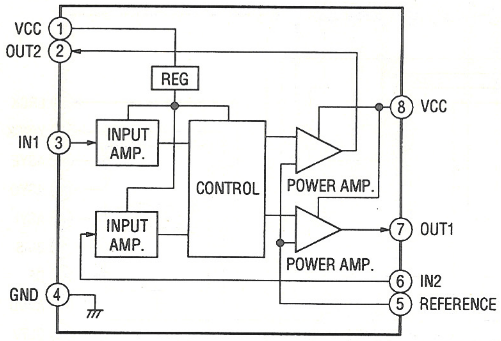
IC751 M65850P (HP/MIC BOARD)


VCC
CLOCK
REF
OP2IN
OP2OUT
LPF2IN
LPF2OUT
14
13
12
11
10
9
8
OSCILLATOR
D/A
LPF2
1/2 VCC
CLOCK
DO1
MO
AUTO RESET
RESET
MAIN CONTROL
MI
20KBIT SRAM
D1
DO0
A/D
LPF1
1
2
3
4
5
6
7
LPF1IN
LPF1OUT
OP1OUT
OP1IN
CC1
CC2
GND

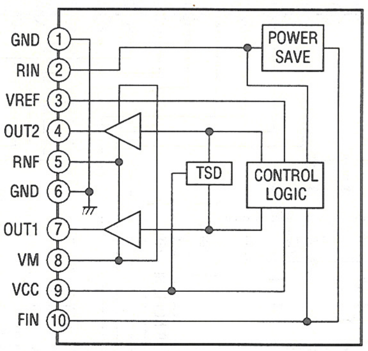
IC602 μPC1330HA (AUDIO BOARD)


INVERTER
COMPARATER
1
2
3
4
5
6
7
8
9
SW R1
GND
SW P1
CONT
GND
VCC
SW P2
GND
SW R2

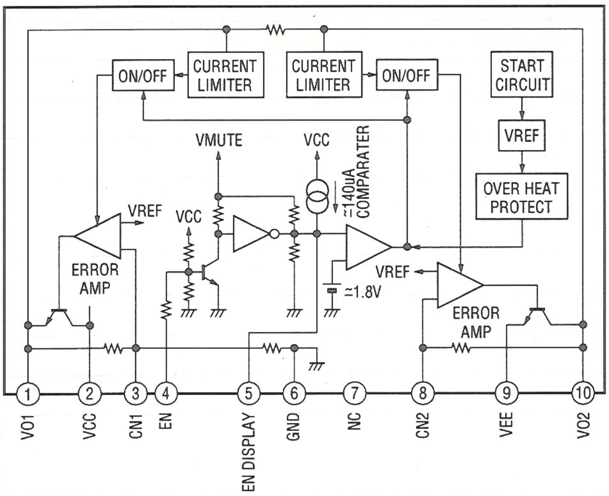
IC701 M54641L (MOTOR (TURN) BOARD)


VCC 1
OUT2 2
REG
IN1 3
INPUT AMP.
CONTROL
POWER AMP.
INPUT AMP.
POWER AMP.
GND 4
8 VCC
7 OUT1
6 IN2
5 REFERENCE

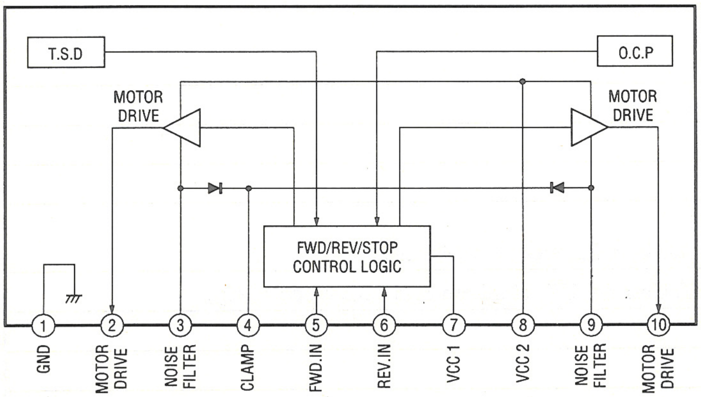
IC801 BA6286N (MOTOR (SLIDE) BOARD)


GND 1
RIN 2
VREF 3
OUT2 4
RNF 5
GND 6
OUT1 7
VM 8
VCC 9
FIN 10
POWER SAVE
TSD
CONTROL LOGIC

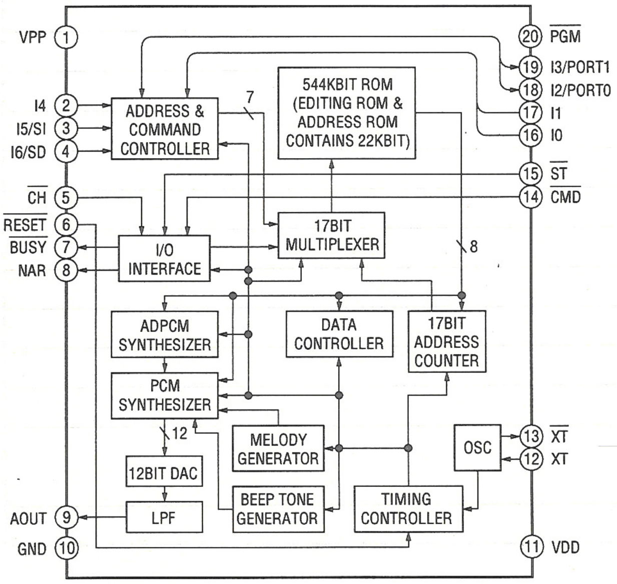
IC901 LA5617 (MAIN BOARD)


ON/OFF
CURRENT LIMITER
CURRENT LIMITER
ON/OFF
START CIRCUIT
VREF
OVER HEAT PROTECT
VMUTE
VCC
≃140uA
COMPARATER
VREF
VCC
ERROR AMP
VREF
≃1.8V
ERROR AMP
1
2
3
4
5
6
7
8
9
10
VO1
VCC
CN1
EN
EN DISPLAY
GND
NC
CN2
VEE
VO2

IC1502 LB1641(MAIN BOARD)


T.S.D
O.C.P
MOTOR DRIVE
MOTOR DRIVE
FWD/REV/STOP CONTROL LOGIC
1
2
3
4
5
6
7
8
9
10
GND
MOTOR DRIVE
NOISE FILTER
CLAMP
FWD.IN
REV.IN
VCC 1
VCC 2
NOISE FILTER
MOTOR DRIVE

IC401 MSM6653A-485RS (DJ BOARD)


VPP 1
I4 2
I5/SI 3
I6/SD 4
CH 5
RESET 6
BUSY 7
NAR 8
AOUT 9
GND 10
20 PGM
19 I3/PORT1
18 I2/PORT0
17 I1
16 I0
15 ST
14 CMD
13 XT
12 XT
11 VDD
ADDRESS & COMMAND CONTROLLER
7
544KBIT ROM (EDITING ROM & ADDRESS ROM CONTAINS 22KBIT)
17BIT MULTIPLEXER
8
I/O INTERFACE
ADPCM SYNTHESIZER
DATA CONTROLLER
17BIT ADDRESS COUNTER
PCM SYNTHESIZER
12
MELODY GENERATOR
OSC
12BIT DAC
LPF
BEEP TONE GENERATOR
TIMING CONTROLLER

6-15. IC PIN FUNCTION DESCRIPTION
MAIN BOARD IC301 μPD780018YGF-011-3BA (MASTER CONTROL)

Pin No.	Pin Name	I/O	Function
1	TA-MUTE	O	Line mute signal output
2	DBFB-H/L	O	DBFB H/L select signal output
3	427-LAT	O	Latch signal output for IC201 (M62427FP)
4	K-CON-LAT	O	Not used
5	K-CON-ON	O	
6	F-RELAY	O	Main speaker relay control output
7	R-RELAY	O	Surround speaker relay control output
8	PL-RELAY	O	Surround speaker relay control output
9	TEST	I	Connected ground
10	X2	O	X'tal (5MHz)
11	X1	I	
12	VDD	–	Power supply (+5V)
13	XT2	O	X'tal (32.768 kHz)
14	XT1	I	
15	RESET	I	Reset signal input
16	(INT/IN)	I	Connected ground
17	(INT/IN/OUT)	I	
18	SCOR	O	Subcode data request signal output
19	SOFT-TEST	O	Software test port
20	AC-CUT	I	Reset signal input
21	RDS-INT	I	Serial data transfer clock signal input (HCD-RX90: AEP, German, UK, Northern European models only)
22	RDS-DATA	I	Serial data input (HCD-RX90: AEP, German, UK, Northern European models only)
23	VDD	–	Power supply (+5V)
24	AVDD	I	Analog reference voltage input
25	ADJ	I	CD adjust point port
26	A-SHUT	I	A Deck reel pulse detector
27	B-SHUT	I	B Deck reel pulse detector
28	B-HALF	I	Half detector signal input
29	CLK-CHECK	I	Connected ground
30	SPEC-IN	I	Version select signal input
31	ADJ 2	I	Connected ground
32	DEMO-MODE	I	DEMO H/L select signal input
33	AVSS	–	Ground
34	SQ-DATA-IN	I	Subcode Q data clock input
35	—	–	Not used
36	SQ-CLK	I	Sub code Q data clock input
37	SW-ON/OFF	O	Not used
38, 39	FUNC 1, 2	I	Connected ground
40	VSS	–	Ground
41	VOL-LAT	O	Not used
42	PL-LAT	O	
43	COM-DIN	I	Connected ground

Pin No.	Pin Name	I/O	Function
44	COM-DOUT	O	Common serial data output
45	COM-CLK	O	Common serial clock output
46	CD-POWER	O	CD power on signal output
47	CD-DATA	O	CD data output
48	CD-CLK	O	CD clock output
49	MSM-CND	O	DJ effect command output
50	MSM-BUSY	I	Busy signal input
51	MSM-LAT	O	Serial latch pulse output
52	MSM-NAR	I	NAR signal input
53	MSM-CH	O	CH select output
54	INPUT-CHANGE	O	GAIN control output
55	1IC-DATA	O	Data output for IC601
56	1IC-CLK	O	Clock output for IC601
57	XRST	O	CD reset signal output
58	XLT	O	CD latch signal output
59	FOUCUS-SW	O	Focus switching signal output
60	TBL-L	O	Table motor control output
61	TBL-R	O	
62	TRAY-LED	O	CD tray LED ON/OFF output
63	LOAD-OUT	O	Loading motor control signal output
64	LOAD-IN	O	
65	ST-CLK	O	Tuner clock output
66	ST-DIN	I	Tuner data input
67	ST-DOUT	O	Tuner data output
68	ST-CE	O	Tuner chip enable output
69	TUNED	I	Tuned detection for tuner
70	STEREO	I	Stereo detection for tuner
71	VSS	–	Ground
72	ST-MUTE	O	Tuner mute signal output
73	SENS2	I	BD Condition signal input
74	SENS	I	
75	DISC-SENS	I	Not used
76	T-SENS	I	CD table detection signal input
77	UPSW	I	Up SW (S201) signal input (Not used)
78	ENC 3	I	Disctray address detect encoder input
79	ENC 2	I	
80	ENC 1	I	
81	OUT-OPEN	I	Out switch signal input
82	CAP-H/N	O	Capstan motor H/N speed select signal output
83	B-TRG	O	Trigger motor control output
84	A-TRG	O	Trigger motor control output
85	TRG-LOW	O	Trigger motor control output
86	CAP-M-ON/OFF	O	Capstan motor ON/OFF signal output

Pin No.	Pin Name	I/O	Function
87	PB-A/B	O	PB Deck A/Deck B select output
88	EQ-H/N	O	Equalizer H/N select output
89	BIAS	O	Bias ON/OFF signal output
90	REC-MUTE	O	REC mute ON/OFF selection output
91	NR-ON/OFF	O	NR ON/OFF signal output
92	R/P-PASS	O	REC/PB/PASS selection output
93	TC-MUTE	O	TC mute ON/OFF selection output
94	A-PLAY-SW	I	Deck A play detect
95	B-PLAY-SW	I	Deck B play detect
96	RELAY	O	REC/PB head selection output for IC602
97	A-HALF	I	Deck A cassette detect
98	POWER	O	POWER ON/OFF signal output
99	SW-F-CON	O	Super woofer mode signal output (Not used)
100	STK-MUTE	O	Power amp ON/OFF signal output

PANEL BOARD IC601 TMP87CH75F-6543 (GRAPHIC CONTROL)

Pin No.	Pin Name	I/O	Function
1	SEG-35	O	Fluorescent display tube segment signal output
2	V-LOAD	–	–30V for Fluorescent display tube
3-10	LED1-LED8	O	LED driver output
11	VSS	–	Ground
12	X-OUT	O	X'tal (8MHz)
13	X-IN	I	X'tal (8MHz)
14	RESET	I	Reset signal input from master control
15, 16	LED9, LED10	O	LED driver output
17	TEST	I	Connected ground
18-23	LED11-LED16	O	LED driver output
24	VOL-A	I	Rotaly encoder pulse input
25	LED 17	O	Not used
26	JOG-A	I	Rotaly encoder pulse input
27	CLOCK	I	Serial clock input from master control
28	DATA	I	Serial data input from master control
29	LED SELECT	O	LED select signal output
30	VDD	–	Power supply (+5V)
31	VSS	–	Ground
32	MODEL	I	Connected ground
33-37	KEY1-KEY5	I	Key input
38	EWS STANDBY	–	Not used
39	SIRCS	I	Remote commander signal input
40	VOL-B	I	Rotaly encoder pulse input
41	JOG-B	I	Rotaly encoder pulse input
42-45	SPEANA 1-4	I	Spectrum analyzer signal input
46	L + R	I	Spectrum analyzer (high frequency) input
47	EWS SIGNAL /LED 18	I	Not used
48	VASS	–	Ground
49	VAREF	I	Analog reference voltage input
50	VDD	–	Power supply (+5V)
51-66	GR1-GR16	O	Fluorescent display tube gride signal output
67-100	SEG1-SEG34	O	Fluorescent display tube segment signal output

SECTION 7
EXPLODED VIEWS

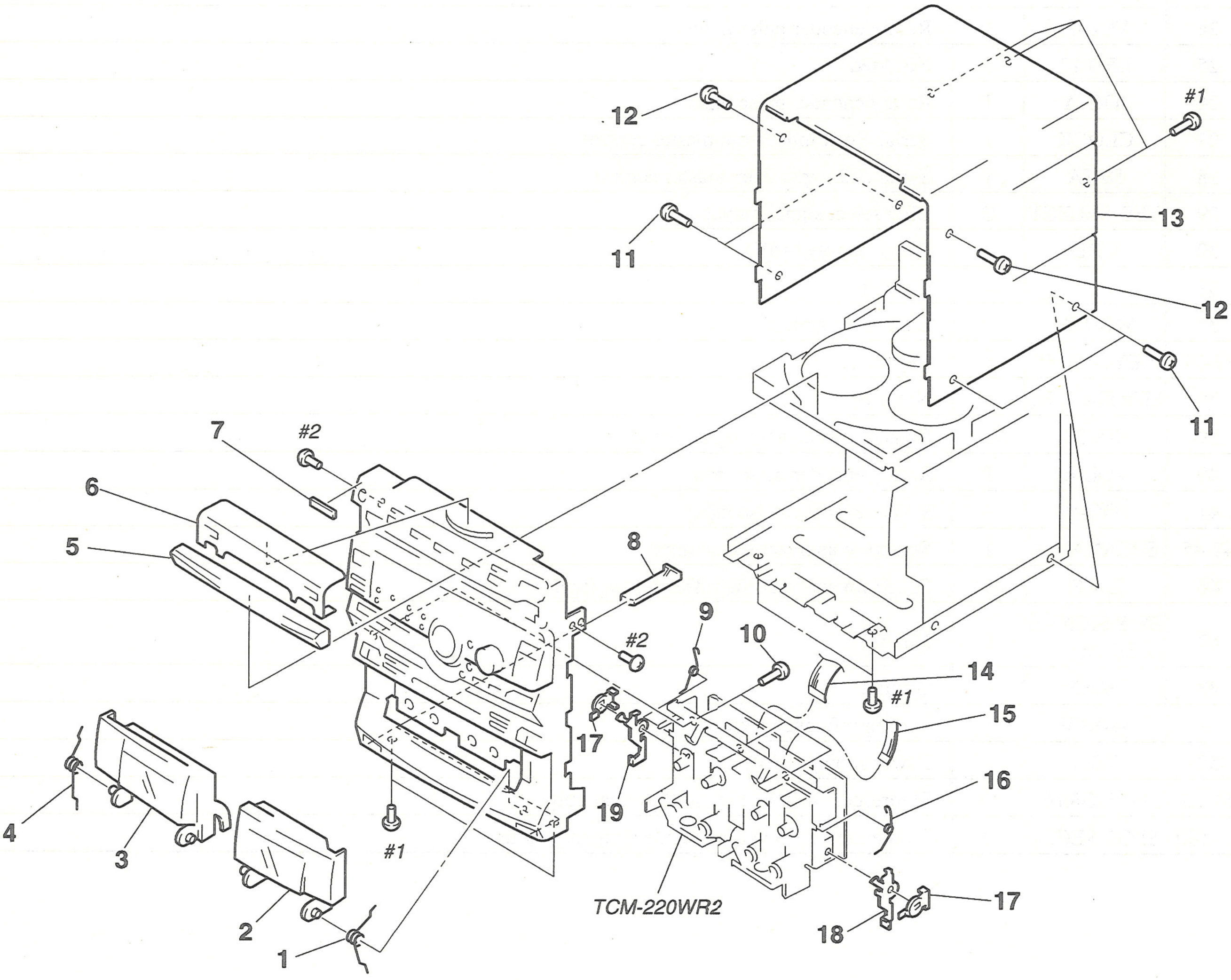
NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearrance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

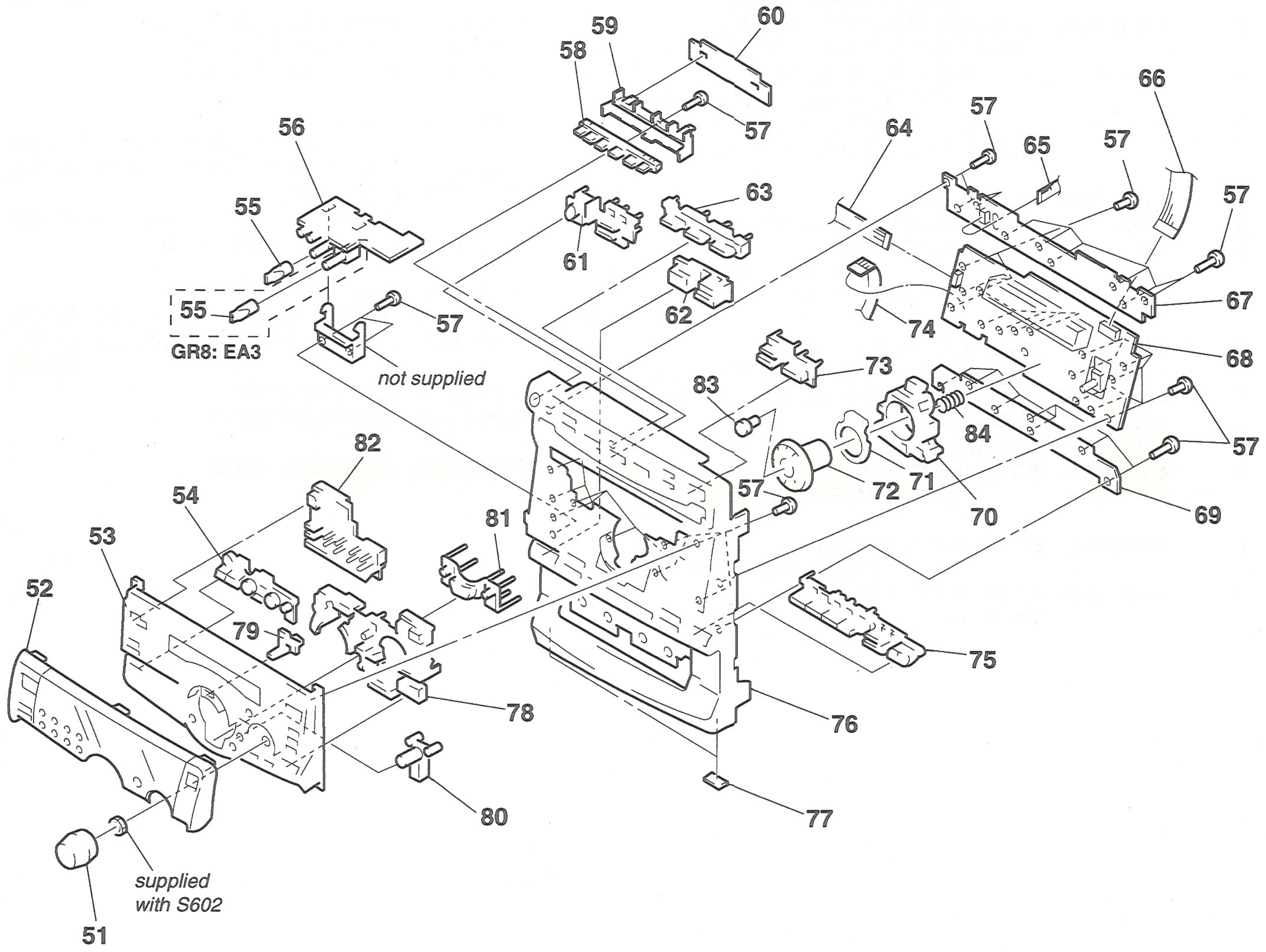
- Abbreviation
  AED : Northern European model
  AUS : Australian
  EA3 : Saudi Arabia
  EA4 : Israeli
  EE : East European
  E2 : 120V AC Area in E model
  E3 : 240V AC Area in E model
  G : German
  HK : Hong Kong
  IA : Indonesia
  JE : Tourist
  MX : Mexican
  MY : Malaysia
  SAF : South African
  SP : Singapore
  TH : Thailand
  TW : Taiwan

(1) CASE, MD ASS'Y SECTION



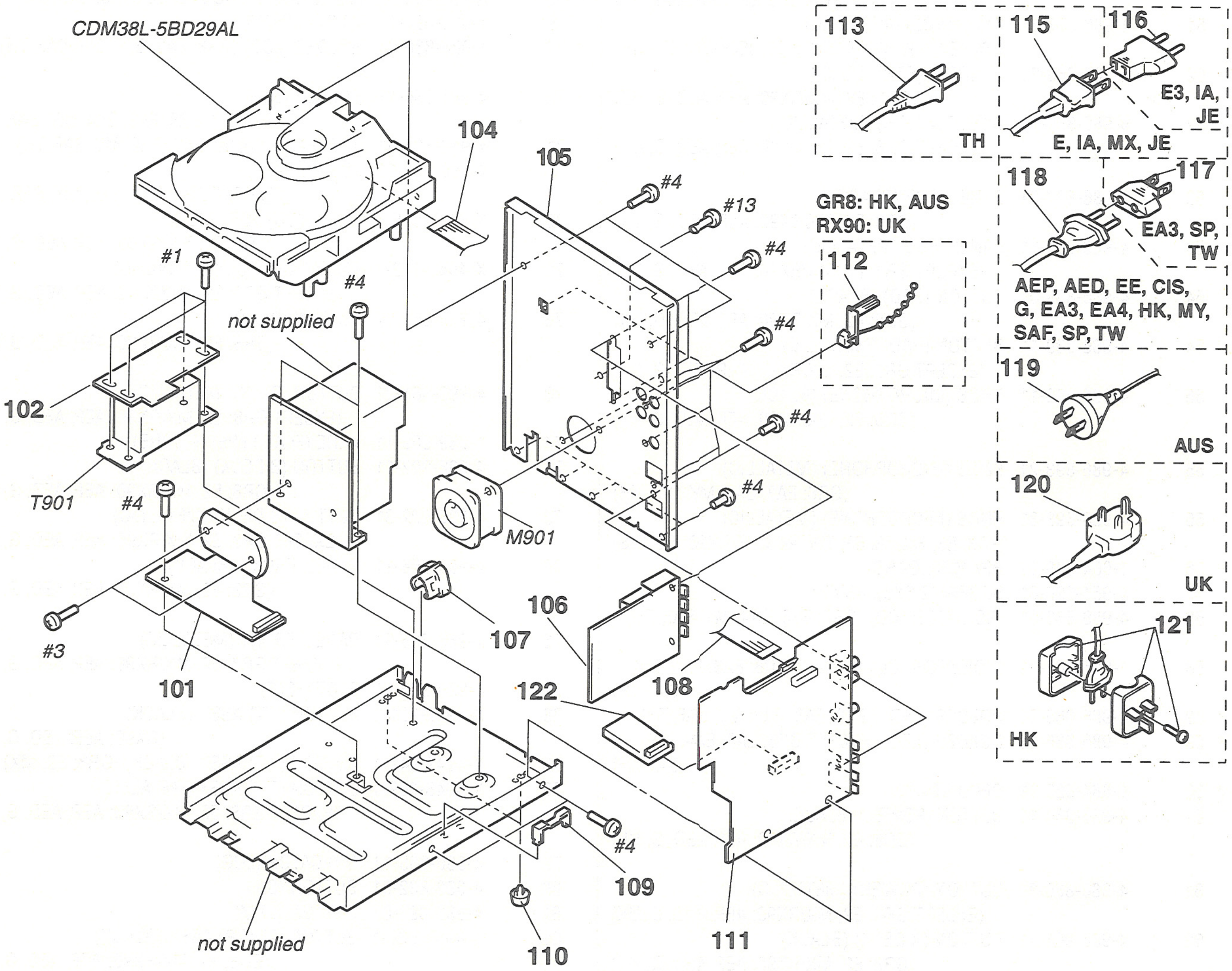
Ref. No.	Part No.	Description	Remark
1	4-989-904-11	SPRING (B DECK)	
2	X-4947-923-1	LID (B) ASSY, CASSETTE (BLACK) (GR8: E2, MX/RX90: AEP, AED, G, UK)	
2	X-4948-119-1	LID (B) ASSY, CASSETTE (METALLIC) (EXCEPT GR8: E2, MX/RX90: AEP, AED, G, UK)	
3	X-4947-922-1	LID (A) ASSY, CASSETTE (BLACK) (GR8: E2, MX/RX90: AEP, AED, G, UK)	
3	X-4948-118-1	LID (A) ASSY, CASSETTE (METALLIC) (EXCEPT GR8: E2, MX/RX90: AEP, AED, G, UK)	
4	4-989-903-11	SPRING (A DECK)	
5	4-986-858-41	PANEL, LOADING (METALLIC) (GR8: EA3, MY)	
5	4-988-078-01	PANEL, LOADING (BLACK) (RX90: AEP, AED, G, UK)	
5	4-988-078-11	PANEL, LOADING (BLACK) (GR8: E2, MX)	
5	4-988-078-41	PANEL, LOADING (METALLIC) (GR8: E3, EA4, HK, IA, SAF, TH, TW, AUS, JE)	
5	4-911-701-31	PANEL, LOADING (METALLIC) (RX90: EE, CIS)	
6	4-986-859-11	WINDOW (CD)	
7	4-962-708-21	EMBLEM (4-A), SONY	
8	4-986-843-11	BUTTON (EJECT) (BLACK) (GR8: E2, MX/RX90: AEP, AED, G, UK)	
8	4-986-843-21	BUTTON (EJECT) (METALLIC) (GR8: EA3,EA4, MY, SAF, TH)	
8	4-986-843-31	BUTTON (EJECT) (METALLIC) (GR8: E3, HK, IA, SP, TW, AUS, JE/RX90: EE, CIS)	
9	4-990-129-01	SPRING (OPEN A) (GR8: EA3, EA4, MY, SAF, TH)	
9	4-990-129-11	SPRING (OPEN A) (EXCEPT GR8: EA3, EA4, MY, SAF, TH)	
10	4-951-620-01	SCREW (2.6X8), +BVTP	
11	3-363-099-01	SCREW (CASE 3 TP2) (3X8)	
12	3-363-099-41	SCREW (CASE 3 TP2) (3X10)	
* 13	4-986-851-31	CASE (BLACK) (GR8: E2, MX/RX90: AEP, AED, G, UK)	
* 13	4-988-767-11	CASE (METALLIC) (GR8: EA3, EA4, MY, SAF, TH)	
* 13	4-988-767-51	CASE (METALLIC) (GR8: E3, HK, IA, SP, TW, AUS, JE/RX90: EE, CIS)	
14	1-773-160-11	WIRE (FLAT TYPE) (21 CORE)	
15	1-769-947-11	WIRE (FLAT TYPE) (11 CORE)	
16	4-990-130-01	SPRING (OPEN B) (GR8: EA3, EA4, MY, SAF, TH)	
16	4-990-130-11	SPRING (OPEN B) (EXCEPT GR8: EA3, EA4, MY, SAF, TH)	
17	3-354-957-01	JOINT (LOCK LEVER)	
* 18	3-354-954-01	LEVER (LOCK LEVER R)	
* 19	3-354-953-01	LEVER (LOCK LEVER L)	

(2) FRONT PANEL SECTION


60
59
58
57
66
57
64
65
57
56
57
55
63
61
67
55
57
GR8: EA3
62
74
68
not supplied
73
83
84
57
82
71
72
70
69
54
81
53
52
79
75
78
76
80
77
supplied
with S602
51

Ref. No.	Part No.	Description	Remark
51	4-986-877-11	KNOB (VOL) (BLACK) (GR8: E2, MX/RX90: AEP, AED, G, UK)	
51	4-986-877-21	KNOB (VOL) (METALLIC) (GR8: EA3, EA4, MY, SAF, TH)	
51	4-986-877-31	KNOB (VOL) (METALLIC) (GR8: E3, HK, IA, SP, TW, AUS, JE/RX90: EE, CIS)	
52	4-986-869-21	WINDOW (STR) (BLACK) (GR8: E2, MX/RX90: AEP, AED, G, UK)	
52	4-986-869-71	WINDOW (STR) (METALLIC) (EXCEPT GR8: E2, MX/RX90: AEP, AED, G, UK)	
53	4-986-867-01	PANEL, SUB (BLACK) (GR8: E2, MX/RX90: AEP, AED, G, UK)	
53	4-986-867-11	PANEL, SUB (METALLIC) (EXCEPT GR8: E2, MX/RX90: AEP, AED, G, UK)	
54	4-986-889-01	BUTTON (PAD) (BLACK) (GR8: E2, MX/RX90: AEP, AED, G, UK)	
54	4-986-889-11	BUTTON (PAD) (METALLIC) (EXCEPT GR8: E2, MX/RX90: AEP, AED, G, UK)	
55	4-986-893-11	KNOB (MICROPHONE) (BLACK) (GR8: E2, MX/RX90: AEP, AED, G, UK)	
55	4-986-893-21	KNOB (MICROPHONE) (METALLIC) (GR8: EA3, EA4, MY, SAF, TH)	
55	4-986-893-31	KNOB (MICROPHONE) (METALLIC) (GR8: E3, HK, IA, SP, TW, AUS, JE/RX90: EE, CIS)	
* 56	1-664-025-11	HP/ MIC BOARD	
57	4-951-620-01	SCREW (2.6X8), +BVTP	
58	4-986-863-01	INDICATOR (CD) (GR8: EA3, EA4, MY, SAF, TH)	
58	4-986-863-11	INDICATOR (CD) (EXCEPT GR8: EA3, EA4, MY, SAF, TH)	
* 59	4-986-865-01	HOLDER (LED) (GR8: EA3, EA4, MY, SAF, TH)	
* 59	4-986-865-11	HOLDER (LED) (EXCEPT GR8: EA3, EA4, MY, SAF, TH)	
* 60	1-664-028-11	DECO BOARD	
61	4-986-860-11	BUTTON (POWER) (BLACK) (GR8: E2, MX/RX90: AEP, AED, G, UK)	
61	4-986-860-31	BUTTON (POWER) (METALLIC) (EXCEPT GR8: E2, MX/RX90: AEP, AED, G, UK)	
62	4-986-901-11	BUTTON (A DECK) (BLACK) (GR8: E2, MX/RX90: AEP, AED, G, UK)	
62	4-986-901-31	BUTTON (A DECK) (METALLIC) (EXCEPT GR8: E2, MX/RX90: AEP, AED, G, UK)	
63	4-986-862-11	BUTTON (CD)	
64	1-777-869-11	WIRE (FLAT TYPE) (10 CORE)	
65	1-777-936-11	WIRE (FLAT TYPE) (5 CORE)	
66	1-773-051-11	WIRE (FLAT TYPE) (17 CORE)	
* 67	1-664-023-11	CD SW BOARD	
* 68	A-4392-381-A	PANEL BOARD, COMPLETE (RX90: AEP, AED, G, UK)	
* 68	A-4392-382-A	PANEL BOARD, COMPLETE (RX90: EE, CIS)	
* 68	A-4392-383-A	PANEL BOARD, COMPLETE (GR8: E2, E3, HK, IA, MX, SP, TW, AUS, JE)	
* 68	A-4392-825-A	PANEL BOARD, COMPLETE (GR8: EA4, TH, SAF)	
* 68	A-4398-184-A	PANEL BOARD, COMPLETE (GR8: EA3, MY)	
* 69	1-664-024-11	TC SW BOARD	
* 70	4-986-880-01	HOLDER (JOG) (GR8: EA3, EA4, MY, SAF, TH)	
* 70	4-986-880-11	HOLDER (JOG) (EXCEPT GR8: EA3, EA4, MY, SAF, TH)	
71	4-986-881-01	JOG (PLATE) (GR8: EA3, EA4, MY, SAF, TH)	
71	4-986-881-11	JOG (PLATE) (EXCEPT GR8: EA3, EA4, MY, SAF, TH)	
72	X-4947-918-1	KNOB (JOG) ASSY (BLACK) (GR8: E2, MX/RX90: AEP, AED, G, UK)	
72	X-4948-113-1	KNOB (JOG) ASSY (METALLIC) (EXCEPT GR8: E2, MX/RX90: AEP, AED, G, UK)	
73	4-986-861-11	BUTTON (PLAY) (GR8: E2, MX/RX90: AEP, AED, G, UK)	
73	4-986-861-31	BUTTON (PLAY) (METALLIC) (EXCEPT GR8: E2, MX/RX90: AEP, AED, G, UK)	
74	1-769-909-11	WIRE (FLAT TYPE) (9 CORE)	
75	4-986-902-11	BUTTON (B DECK) (BLACK) (GR8: E2, MX/RX90: AEP, AED, G, UK)	
75	4-986-902-31	BUTTON (B DECK) (METALLIC) (EXCEPT GR8: E2, MX/RX90: AEP, AED, G, UK)	
76	4-986-856-11	PANEL, FRONT (BLACK) (GR8: E2, MX/RX90: AEP, AED, G, UK)	
76	4-986-856-31	PANEL, FRONT (METALLIC) (EXCEPT GR8: E2, MX/RX90: AEP, AED, G, UK)	
77	4-930-336-61	FOOT (FELT)	
78	X-4947-921-1	BUTTON (F/T) ASSY (BLACK) (RX90: AEP, AED, G, UK)	
78	X-4947-941-1	BUTTON (F/T) ASSY (BLACK) (GR8: E2, MX)	
78	X-4948-109-1	BUTTON (F/T) ASSY (METALLIC) (EXCEPT GR8: E2, MX/RX90: AEP, AED, G, UK)	
79	4-986-883-11	INDICATOR (JOG)	
80	4-986-882-01	BUTTON (S/F)	
81	4-986-897-01	BUTTON (BPM)	
82	X-4947-920-1	BUTTON (TIMER) ASSY (BLACK) (GR8: E2, MX/RX90: AEP, AED, G, UK)	
82	X-4948-115-1	BUTTON (TIMER) ASSY (METALLIC) (EXCEPT GR8: E2, MX/RX90: AEP, AED, G, UK)	
83	X-4947-919-1	BUTTON (E/N) ASSY (BLACK) (GR8: E2, MX/RX90: AEP, AED, G, UK)	
83	X-4948-120-1	BUTTON (E/N) ASSY (METALLIC) (EXCEPT GR8: E2, MX/RX90: AEP, AED, G, UK)	
84	4-984-085-01	SPRING (ENTER), COMPRESSION	

(3) CHASSIS SECTION

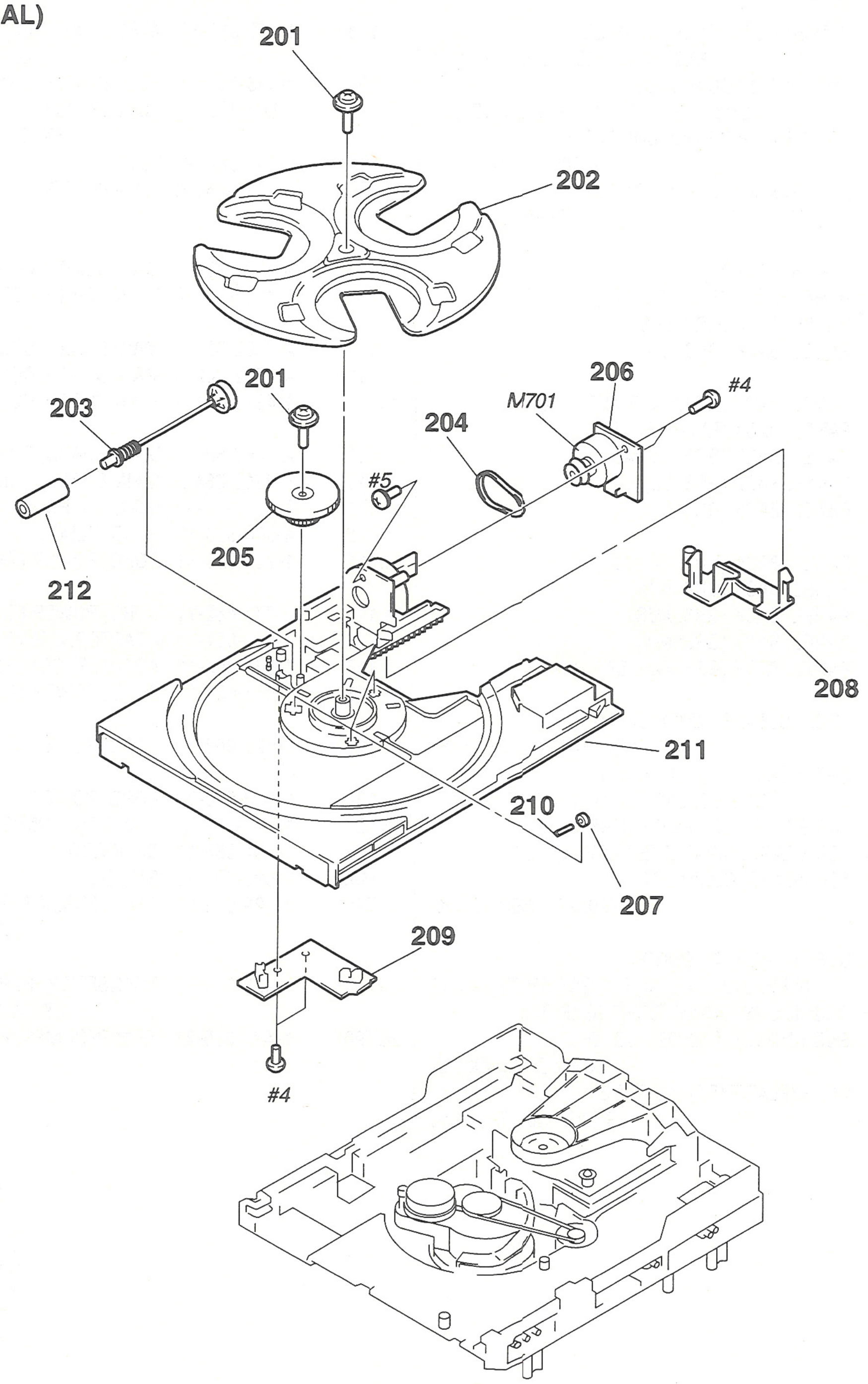


CDM38L-5BD29AL
104
105
#4
#13
#4
#4
#4
#4
#1
#4
not supplied
102
T901
#4
M901
#3
101
106
107
108
122
109
#4
110
111
not supplied
113
TH
115
116
E3, IA, JE
E, IA, MX, JE
118
117
EA3, SP, TW
AEP, AED, EE, CIS, G, EA3, EA4, HK, MY, SAF, SP, TW
GR8: HK, AUS
RX90: UK
112
119
AUS
120
UK
121
HK

Ref. No.	Part No.	Description	Remark
* 101	A-4392-375-A	POWER AMP BOARD, COMPLETE (RX90: AEP, AED, EE, CIS, G, UK)	
* 101	A-4392-376-A	POWER AMP BOARD, COMPLETE (GR8: E, HK, IA, MX, SP, TW, AUS, JE)	
* 101	A-4392-823-A	POWER AMP BOARD, COMPLETE (GR8: EA4, SAF, TH)	
* 101	A-4398-182-A	POWER AMP BOARD, COMPLETE (GR8: EA3, MY)	
* 102	1-664-026-11	TRANS BOARD	
104	1-777-870-11	WIRE (FLAT TYPE) (19 CORE)	
* 105	4-986-845-11	PANEL, BACK (GR8: EA3)	
* 105	4-986-845-21	PANEL, BACK (GR8: MY)	
* 105	4-986-982-01	PANEL, BACK (RX90: AEP, AED, G, UK)	
* 105	4-986-982-11	PANEL, BACK (RX90: EE, CIS)	
* 105	4-988-021-01	PANEL, BACK (GR8: E3, IA)	
* 105	4-988-021-11	PANEL, BACK (GR8: E2)	
* 105	4-988-021-21	PANEL, BACK (GR8: SP)	
* 105	4-988-021-31	PANEL, BACK (GR8: TW, JE)	
* 105	4-988-021-41	PANEL, BACK (GR8: HK)	
* 105	4-988-021-51	PANEL, BACK (GR8: AUS)	
* 105	4-988-021-61	PANEL, BACK (GR8: MX)	
* 105	4-988-021-71	PANEL, BACK (GR8: EA4, SAF, HK)	
106	1-233-545-11	ENCAPSULATED COMPONENT (GR8: E2, EA4, MX, TH, AUS)	
106	1-233-546-11	ENCAPSULATED COMPONENT (GR8: E3, EA3, HK, IA, MY, SAF, SP, TW)	
106	A-4303-508-A	TCB BOARD, COMPLETE (GR8: JE)	
106	A-4303-570-A	TCB BOARD, COMPLETE (RX90: EE, CIS)	
106	A-4303-571-A	TCB BOARD, COMPLETE (RX90: AEP, AED, G, UK)	
* 107	3-703-244-00	BUSHING (2104), CORD (GR8: EA3, EA4, HK, MY, SAF, SP, TW/RX90)	
107	3-703-571-11	BUSHING (S) (4516), CORD (GR8: TH)	
107	4-966-266-01	BUSHING (S) (FBS002), CORD (GR8: E, IA, MX, JE)	
108	1-751-086-11	WIRE (FLAT TYPE) (13 CORE) (GR8: E, MX, TH, AUS)	
108	1-773-012-11	WIRE (FLAT TYPE) (15 CORE) (GR8: E3, EA3, HK, IA, MY, SAF, SP, TW, JE/RX90)	
* 109	4-988-533-01	HOLDER, PCB (GR8: EA3, EA4, MY, SAF, TH)	
* 109	4-988-533-11	HOLDER, PCB (EXCEPT GR8: EA3, EA4, MY, SAF, TH)	
110	4-965-822-01	FOOT	
* 111	A-4392-358-A	MAIN BOARD, COMPLETE (RX90: AEP, AED, G, UK)	
* 111	A-4392-359-A	MAIN BOARD, COMPLETE (RX90: EE, CIS)	
* 111	A-4392-360-A	MAIN BOARD, COMPLETE (GR8: E3, HK, IA, SP, TW)	
* 111	A-4392-361-A	MAIN BOARD, COMPLETE (GR8: E2, MX)	
* 111	A-4392-362-A	MAIN BOARD, COMPLETE (GR8: AUS)	
* 111	A-4392-491-A	MAIN BOARD, COMPLETE (GR8: JE)	
* 111	A-4392-820-A	MAIN BOARD, COMPLETE (GR8: EA4, TH)	
* 111	A-4392-834-A	MAIN BOARD, COMPLETE (GR8: SAF)	
* 111	A-4398-179-A	MAIN BOARD, COMPLETE (GR8: EA3, MY)	
112	4-956-370-12	BAND, PLUG FIXED (GR8: HK, AUS/RX90: UK)	
⚠113	1-751-326-31	CORD, POWER (TH)	
⚠115	1-777-462-11	CORD, POWER (E, IA, MX, JE)	
⚠116	1-569-007-11	ADAPTOR, CONVERSION 2P (E3, IA, JE)	
⚠117	1-569-008-11	ADAPTOR, CONVERSION 2P (EA3, SP, TW)	
⚠118	1-575-651-11	CORD, POWER (AEP, AED, EE, CIS, G, EA3, EA4, HK, MY, SAF, SP, TW)	
⚠119	1-690-608-11	CORD, POWER (AUS)	
⚠120	1-696-570-21	CORD, POWER (UK)	
⚠121	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)	
* 122	1-664-088-11	DJ BOARD	
M901	1-698-792-11	FAN, DC	
⚠T901	1-429-994-11	TRANSFORMER, POWER (RX90: AEP, AED, EE, CIS, G, UK)	
⚠T901	1-429-995-11	TRANSFORMER, POWER (GR8: E, EA4, HK, IA, MX, SAF, SP, TH, TW, AUS, JE)	
⚠T901	1-429-995-21	TRANSFORMER, POWER (GR8: EA3, MY)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

(4) CD MECHANISM DECK SECTION-1
(CDM38L-5BD29AL)


201
202
201
203
206
M701
#4
204
#5
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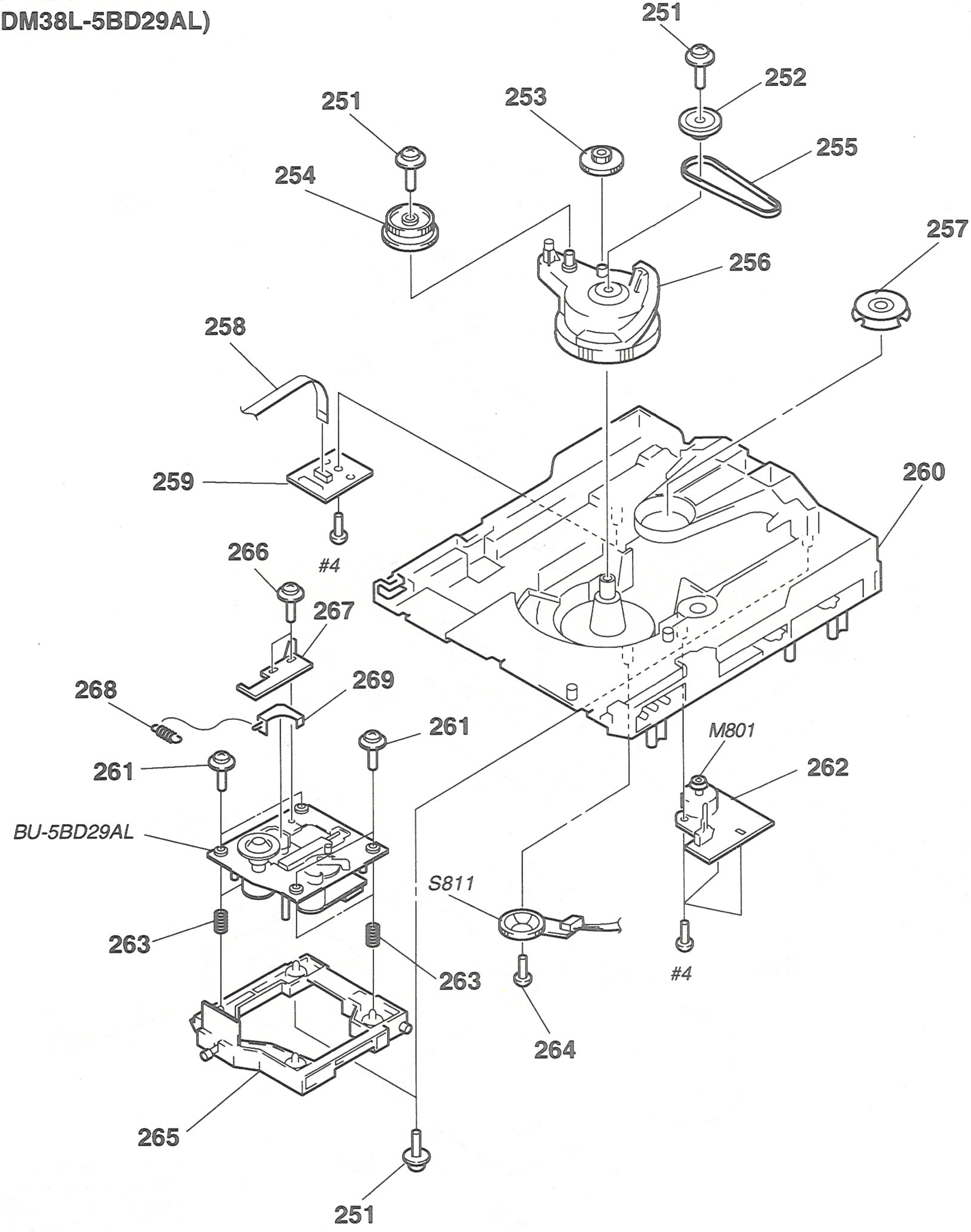
212
208
211
210
207
209
#4

Ref. No.	Part No.	Description	Remark
201	4-917-583-21	BRACKET, YOKE	
202	4-977-945-01	TRAY (TURN)	
203	X-4946-665-1	SHAFT ASSY, WORM	
204	4-977-943-01	BELT (TURN) (1.2)	
205	4-977-956-01	WHEEL, WORM	
* 206	1-658-577-11	MOTOR (TURN) BOARD	
207	X-4924-457-1	ROLLER ASSY	

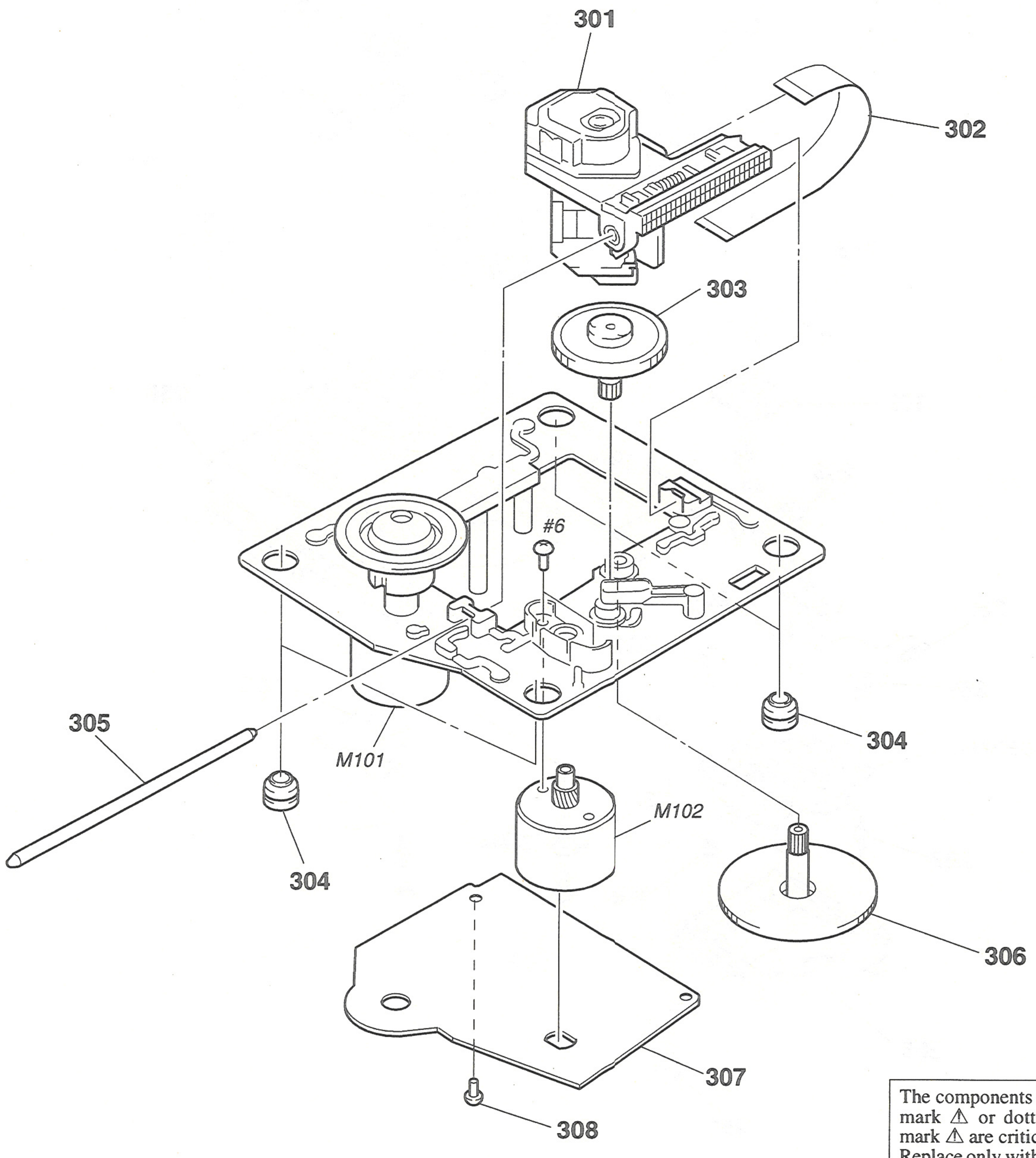
Ref. No.	Part No.	Description	Remark
208	4-977-941-01	BEARING (WORM)	
* 209	1-658-576-11	SENSOR BOARD	
210	4-934-376-01	SHAFT (ROLLER)	
211	4-977-944-01	TRAY (SLIDE)	
212	4-981-187-01	COLLER (WORM)	
M701	A-4672-004-A	MOTOR ASSY (TURN)	

(5) CD MECHANISM DECK SECTION-2 (CDM38L-5BD29AL)


251
252
251
253
255
254
257
256
258
260
259
266
#4
267
268
269
261
261
M801
262
BU-5BD29AL
S811
263
263
#4
264
265
251

Ref. No.	Part No.	Description	Remark
251	4-917-583-71	BRACKET, YOKE	
252	4-977-954-01	PULLEY (SL)	
253	4-977-953-01	GEAR (SL-A)	
254	4-977-955-01	GEAR (SL-B)	
255	4-977-942-01	BELT (SL) (1.4)	
256	X-4946-667-1	CAM ASSY, BU	
257	1-452-538-11	MAGNET	
258	1-776-042-11	WIRE (FLAT TYPE) (8 CORE)	
* 259	1-658-575-11	CONNECTOR BOARD	
* 260	X-4946-668-1	CHASSIS (CDM) ASSY	
261	4-985-672-01	SCREW (+PTPWHM2.6), FLOATING	
* 262	1-658-578-11	MOTOR (SLIDE) BOARD	
263	4-982-447-01	SPRING (BU), COMPRESSION	
264	4-951-620-41	SCREW (2.6), +BVTP	
* 265	X-4946-666-1	HOLDER (BU) ASSY	
266	4-989-494-01	SCREW (SLIDER), STEP	
267	4-989-492-11	SLIDER (38) (GR8: EA3, EA4, MY, SAF, TH)	
267	4-989-492-21	SLIDER (38) (EXCEPT GR8: EA3, EA4, MY, SAF, TH)	
268	4-989-819-02	SPRING, TENSION	
269	4-989-491-11	COVER, LENS (GR8: EA3, EA4, MY, SAF, TH)	
269	4-989-491-21	COVER, LENS (EXCEPT GR8: EA3, EA4, MY, SAF, TH)	
M801	A-4672-004-A	MOTOR ASSY (SLED)	
S811	1-473-335-11	ENCODER, ROTARY (BU, TRAY ADDRESS DET)	

(6) BASE UNIT SECTION
(BU-5BD29AL)

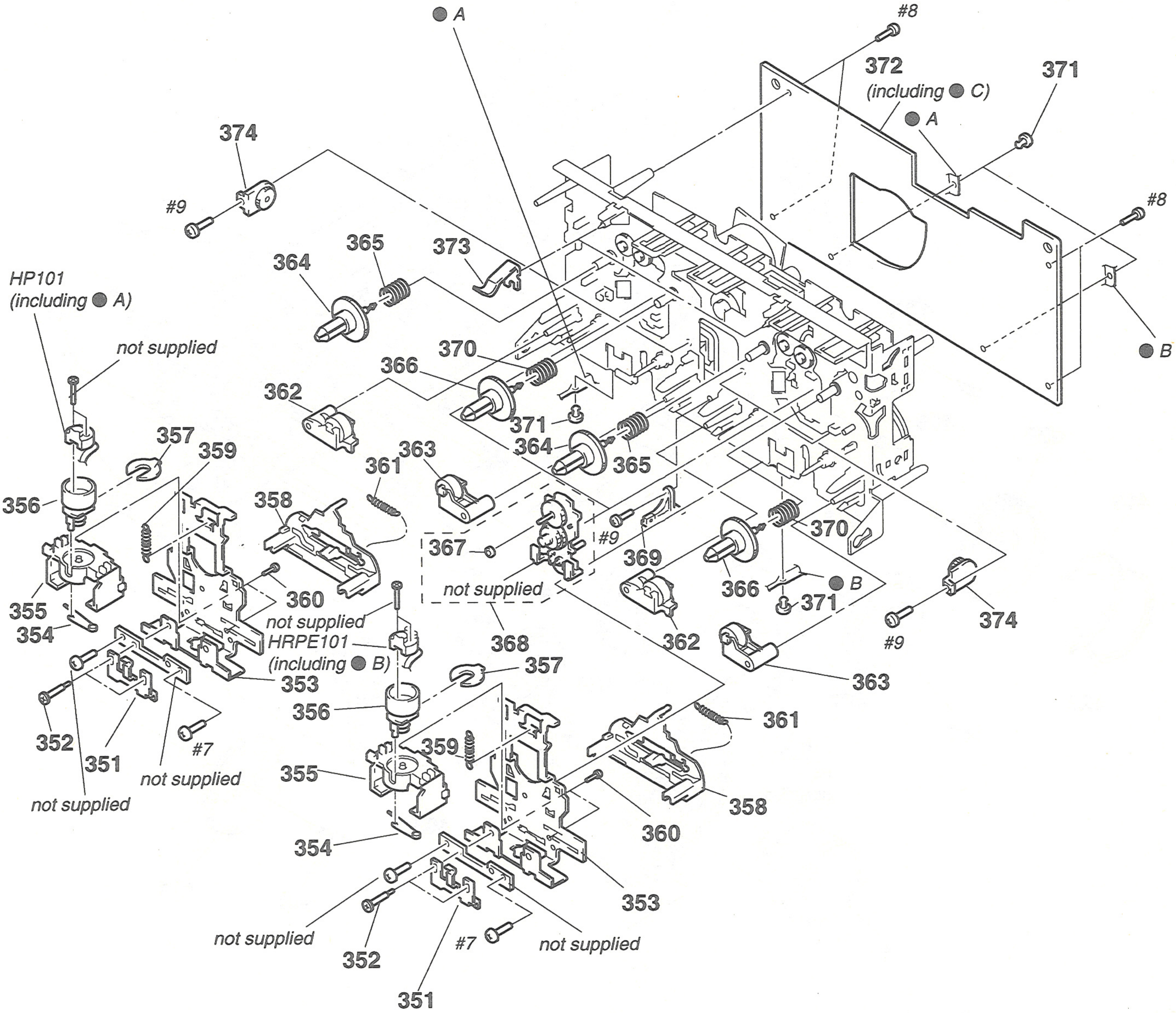


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
⚠301	8-820-020-01	OPTICAL PICK-UP KSS-213D/Q-NP	
302	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
303	4-917-567-21	GEAR (M)	
304	4-951-940-01	INSULATOR (BU) (EXCEPT GR8: EA3, MY)	
304	4-951-940-31	INSULATOR (BU) (GR8: EA3, MY/RX90: AEPM)	
305	4-917-565-01	SHAFT, SLED	

Ref. No.	Part No.	Description	Remark
306	4-917-564-01	GEAR (P), FLATNESS	
* 307	A-4699-522-A	BD BOARD, COMPLETE	
308	4-951-620-01	SCREW (2.6X8), +BVTP	
M101	X-4917-523-4	MOTOR ASSY SPINDLE	
M102	X-4917-504-1	MOTOR ASSY SLED	

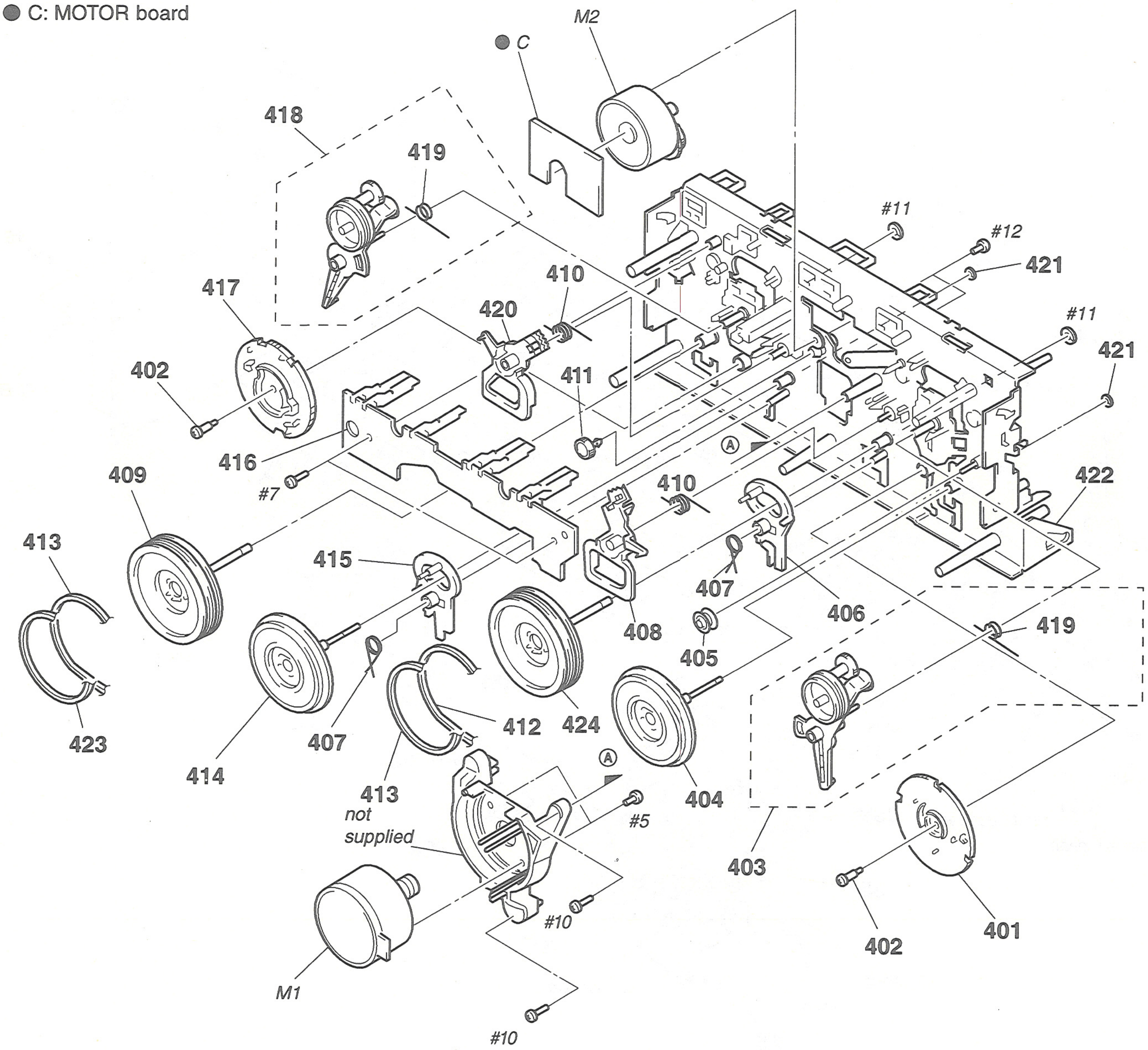
(7) TAPE MECHANISM DECK SECTION-1 (TCM-220WR2)


● A
#8
372
(including ● C)
371
● A
374
#9
#8
365
373
364
HP101
(including ● A)
● B
not supplied
370
366
362
371
357
359
363
364
365
361
356
358
367
#9
370
369
not supplied
366
● B
355
360
371
354
not supplied
374
HRPE101
368
(including ● B)
362
#9
357
353
363
356
352
#7
361
351
359
not supplied
355
not supplied
358
360
354
353
not supplied
352
#7
not supplied
351

Ref. No.	Part No.	Description	Remark
351	3-908-560-01	SPRING, AZIMUTH ADJUSTMENT	
352	3-919-684-01	SCREW, AZIMUTH ADJUSTMENT	
353	X-3373-113-1	SLIDER (HEAD) ASSY	
354	3-908-556-01	SPRING, HEAD TOGGLE	
355	3-908-558-02	FITTING BLOCK, HEAD	
356	3-908-557-02	ROTARY BLOCK, HEAD	
* 357	3-908-559-01	STOPPER, AZIMUTH	
358	3-908-555-01	SLIDER (REV SLIDER)	
359	3-917-143-11	SPRING, TENSION	
360	3-388-848-01	SCREW (P2X6) (B TIGHT)	
361	3-939-371-01	SPRING (1), TENSION	
362	X-3369-909-1	PINCH LEVER (REV) ASSY	
363	X-3369-908-1	PINCH LEVER (FWD) ASSY	
364	3-908-613-01	GEAR (S), REEL	
365	3-917-141-01	SPRING, COMPRESSION	
366	X-3371-305-1	REEL (T) ASSY	
367	3-669-465-01	WASHER (1.5), STOPPER	
368	X-3370-173-1	TU ASSY	
* 369	4-980-439-01	FULCRUM, HOLDER	
370	3-917-142-01	SPRING, COMPRESSION	
371	3-939-862-01	CLIP	
* 372	A-2007-131-A	AUDIO BOARD, COMPLETE	
373	3-930-972-01	DETENT, HALF	
374	3-354-963-01	DAMPER	
HP101	1-500-093-11	HEAD, MAGNETIC (PLAYBACK) (DECK A)	
HRPE101	1-500-094-11	HEAD, MAGNETIC (REC/PB/ERASE) (DECK B)	

(8) TAPE MECHANISM DECK SECTION-2 (TCM-220WR2)

● C: MOTOR board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402
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#11
#12
421
#11
421
416
#7
409
A
410
422
413
415
407
406
408
419
405
412
424
423
407
414
413
not supplied
A
#5
404
403
#10
M1
402
401
#10

Ref. No.	Part No.	Description	Remark
401	3-908-597-01	CAM (A)	
402	3-908-608-11	SCREW, STEP	
403	X-3372-930-1	ARM (A) ASSY, FR	
404	X-3370-169-1	FLYWHEEL (AR) ASSY	
405	3-928-047-01	PULLEY, TENSION	
406	3-908-599-01	LEVER (REV-A)	
407	3-908-601-01	SPRING (REV LEVER), TORSION	
408	3-908-603-01	LEVER (TRIGGER A)	
409	X-3367-593-1	FLYWHEEL (BF) ASSY	
410	3-908-605-01	SPRING (TRIGGER), TORSION	
411	3-908-609-01	GEAR, TRIGGER	
412	3-913-845-11	BELT (A)	
413	3-913-846-11	BELT (FR)	
414	X-3370-171-1	FLYWHEEL (BR) ASSY	
415	3-908-600-01	LEVER (REV-B)	
* 416	1-650-669-11	LEAF SWITCH BOARD	
417	3-908-598-01	CAM (B)	
418	X-3372-931-1	ARM (B) ASSY, FR	
419	3-914-111-01	SPRING (FR), TORSION	
420	3-908-604-01	LEVER (TRIGGER B)	
421	3-911-115-01	WASHER, STOPPER	
422	X-3371-441-1	CHASSIS ASSY, MECHANICAL	
423	3-917-176-11	BELT (B)	
424	X-3370-172-1	FLYWHEEL (AF) ASSY	
M1	X-3371-223-1	MOTOR ASSY CAPSTAN	
M2	A-2004-410-A	MOTOR ASSY, DC (TRIGGER)	

SECTION 8
ELECTRICAL PARTS LIST

AUDIO

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA. . : μA. . uPA. . : μPA. .
  uPB. . : μPB. . uPC. . : μPC. .
  uPD. . : μPD. .
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

- Abbreviation
  AED : Northern European model
  AUS : Australian
  E2 : 120V AC Area in E model
  E3 : 240V AC Area in E model
  EA3 : Saudi Arabia
  EA4 : Israeli
  EE : East European
  G : German
  HK : Hong Kong
  IA : Indonesia
  JE : Tourist
  MX : Mexican
  MY : Malaysia
  SAF : South African
  SP : Singapore
  TH : Thailand
  TW : Taiwan

Ref. No.	Part No.	Description	Remark
*	A-2007-131-A	AUDIO BOARD, COMPLETE **********************	
		< CAPACITOR >	
C301	1-162-289-31	CERAMIC 390PF 10% 50V	
C302	1-126-968-11	ELECT 100uF 20% 6.3V	
C303	1-162-282-31	CERAMIC 100PF 10% 50V	
C304	1-130-483-00	MYLAR 0.01uF 5% 50V	
C305	1-107-715-11	ELECT 22uF 20% 16V	
C311	1-162-289-31	CERAMIC 390PF 10% 50V	
C313	1-162-282-31	CERAMIC 100PF 10% 50V	
C314	1-130-487-00	MYLAR 0.022uF 5% 50V	
C315	1-126-233-11	ELECT 22uF 20% 50V	
C331	1-137-427-11	FILM 120PF 5% 50V	
C332	1-162-288-31	CERAMIC 330PF 10% 50V	
C333	1-162-209-31	CERAMIC 27PF 5% 50V	
C401	1-162-289-31	CERAMIC 390PF 10% 50V	
C402	1-126-968-11	ELECT 100uF 20% 6.3V	
C403	1-162-282-31	CERAMIC 100PF 10% 50V	
C404	1-130-483-00	MYLAR 0.01uF 5% 50V	
C405	1-107-715-11	ELECT 22uF 20% 16V	
C411	1-162-289-31	CERAMIC 390PF 10% 50V	
C413	1-162-282-31	CERAMIC 100PF 10% 50V	
C414	1-130-487-00	MYLAR 0.022uF 5% 50V	
C415	1-126-233-11	ELECT 22uF 20% 50V	
C431	1-137-427-11	FILM 120PF 5% 50V	
C432	1-162-288-31	CERAMIC 330PF 10% 50V	
C433	1-162-209-31	CERAMIC 27PF 5% 50V	
C601	1-104-396-11	ELECT 10uF 20% 16V	
C602	1-104-396-11	ELECT 10uF 20% 16V	
C611	1-124-907-11	ELECT 10uF 20% 50V	
C612	1-124-907-11	ELECT 10uF 20% 50V	
C621	1-137-150-11	FILM 0.01uF 5% 100V	
C622	1-126-961-11	ELECT 2.2uF 20% 50V	
C623	1-136-155-00	FILM 0.015uF 5% 50V	
C624	1-130-481-00	MYLAR 0.0068uF 5% 50V	
C625	1-130-481-00	MYLAR 0.0068uF 5% 50V	
C627	1-124-903-11	ELECT 1uF 20% 50V	
C628	1-136-153-00	FILM 0.01uF 5% 50V	
C642	1-104-664-11	ELECT 47uF 20% 16V	
		< CONNECTOR >	
CN601	1-695-382-31	PIN, CONNECTOR (PC BOARD) 21P	
CN602	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P	
* CN651	1-564-521-11	PLUG, CONNECTOR 6P	
		< IC >	
IC601	8-759-111-44	IC uPC4570C-1	
IC602	8-759-143-54	IC uPC1330HA	
IC611	8-759-111-44	IC uPC4570C-1	
		< COIL >	
L331	1-410-780-11	INDUCTOR 27mH	
L431	1-410-780-11	INDUCTOR 27mH	
		< TRANSISTOR >	
Q621	8-729-142-46	TRANSISTOR 2SC2001-LK	
Q622	8-729-142-46	TRANSISTOR 2SC2001-LK	
Q623	8-729-801-93	TRANSISTOR 2SD1387	
Q651	8-729-900-65	TRANSISTOR DTA144ES	
		< RESISTOR >	
R301	1-247-881-00	CARBON 120K 5% 1/4W	
R302	1-249-409-11	CARBON 220 5% 1/4W	
R303	1-249-433-11	CARBON 22K 5% 1/4W	
R304	1-247-889-00	CARBON 270K 5% 1/4W	
R305	1-247-858-11	CARBON 13K 5% 1/4W	
R311	1-247-881-00	CARBON 120K 5% 1/4W	
R312	1-247-807-31	CARBON 100 5% 1/4W	

Ref. No.	Part No.	Description				Remark
R314	1-247-882-11	CARBON	130K	5%	1/4W	
R315	1-247-850-11	CARBON	6.2K	5%	1/4W	
R331	1-249-430-11	CARBON	12K	5%	1/4W	
R401	1-247-881-00	CARBON	120K	5%	1/4W	
R402	1-249-409-11	CARBON	220	5%	1/4W	
R403	1-249-433-11	CARBON	22K	5%	1/4W	
R404	1-247-889-00	CARBON	270K	5%	1/4W	
R405	1-247-858-11	CARBON	13K	5%	1/4W	
R411	1-247-881-00	CARBON	120K	5%	1/4W	
R412	1-247-807-31	CARBON	100	5%	1/4W	
R414	1-247-882-11	CARBON	130K	5%	1/4W	
R415	1-247-850-11	CARBON	6.2K	5%	1/4W	
R431	1-249-430-11	CARBON	12K	5%	1/4W	
R601	1-249-409-11	CARBON	220	5%	1/4W	
R602	1-249-409-11	CARBON	220	5%	1/4W	
R608	1-249-409-11	CARBON	220	5%	1/4W	
R609	1-249-433-11	CARBON	22K	5%	1/4W	
R611	1-249-409-11	CARBON	220	5%	1/4W	
R612	1-249-409-11	CARBON	220	5%	1/4W	
⚠R621	1-212-851-00	FUSIBLE	5.6	5%	1/4W	F
⚠R622	1-212-851-00	FUSIBLE	5.6	5%	1/4W	F
R623	1-249-432-11	CARBON	18K	5%	1/4W	
R624	1-249-432-11	CARBON	18K	5%	1/4W	
R625	1-249-429-11	CARBON	10K	5%	1/4W	
R651	1-247-856-00	CARBON	11K	5%	1/4W	
R652	1-247-856-00	CARBON	11K	5%	1/4W	
R653	1-249-441-11	CARBON	100K	5%	1/4W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description
RV301	1-238-598-11	RES, ADJ, CARBON 2.2K
RV311	1-238-598-11	RES, ADJ, CARBON 2.2K
RV341	1-238-551-11	RES, ADJ, CARBON 220K
RV401	1-238-598-11	RES, ADJ, CARBON 2.2K
RV411	1-238-598-11	RES, ADJ, CARBON 2.2K
RV441	1-238-551-11	RES, ADJ, CARBON 220K
RV651	1-238-599-11	RES, ADJ, CARBON 4.7K
RV652	1-238-599-11	RES, ADJ, CARBON 4.7K

< TRANSFORMER >

Ref. No.	Part No.	Description
T621	1-423-980-11	TRANSFORMER, BIAS OSCILLATION

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* A-4699-522-A BD BOARD, COMPLETE

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< CAPACITOR >

Ref. No.	Part No.	Description				Remark
C101	1-126-607-11	ELECT CHIP	47uF	20%	4V	
C102	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V	
C103	1-164-346-11	CERAMIC CHIP	1uF		16V	
C105	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C106	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C107	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C108	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C109	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C110	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V	
C111	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	
C112	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	
C113	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C114	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C115	1-126-607-11	ELECT CHIP	47uF	20%	4V	
C116	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V	
C117	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C118	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C119	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C120	1-124-779-00	ELECT CHIP	10uF	20%	16V	
C121	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C122	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C123	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C124	1-126-607-11	ELECT CHIP	47uF	20%	4V	
C125	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C126	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C127	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C128	1-163-135-00	CERAMIC CHIP	560PF	5%	50V	
C129	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C130	1-164-336-11	CERAMIC CHIP	0.33uF		25V	
C131	1-164-346-11	CERAMIC CHIP	1uF		16V	
C140	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V	
C154	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C161	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C162	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C163	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C164	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V	
C165	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C166	1-163-137-00	CERAMIC CHIP	680PF	5%	50V	
C167	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C168	1-163-137-00	CERAMIC CHIP	680PF	5%	50V	
C169	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C170	1-163-099-00	CERAMIC CHIP	18PF	5%	50V	
C171	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	
C173	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C174	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C175	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C176	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C177	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C178	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C179	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C181	1-126-205-11	ELECT CHIP	47uF	20%	6.3V	
C182	1-126-393-11	ELECT	33uF	20%	10V	
C183	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C185	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C188	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C189	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CNU101	1-777-937-11	CONNECTOR, FFC/FPC 16P	
CNU102	1-778-874-11	CONNECTOR, FFC(LIF(NON-ZIF))19P	
		< FERRITE BEAD >	
FB101	1-414-234-11	INDUCTOR, FERRITE BEAD	
FB103	1-414-234-11	INDUCTOR, FERRITE BEAD	
		< IC >	
IC101	8-752-080-62	IC CXA1992AR	
IC102	8-759-429-32	IC BA5941FP-E2	
IC103	8-752-378-66	IC CXD2519Q	
		< CHIP CONDUCTOR >	
JW101	1-216-295-91	CONDUCTOR, CHIP (2012)	
JW104	1-216-295-91	CONDUCTOR, CHIP (2012)	
		< TRANSISTOR >	
Q101	8-729-010-08	TRANSISTOR MSB710-R	
		< RESISTOR >	
R102	1-216-001-00	METAL CHIP 10 5% 1/10W	
R104	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R105	1-216-088-00	METAL CHIP 43K 5% 1/10W	
R106	1-216-088-00	METAL CHIP 43K 5% 1/10W	
R107	1-216-088-00	METAL CHIP 43K 5% 1/10W	
R108	1-216-088-00	METAL CHIP 43K 5% 1/10W	
R109	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R114	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R115	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R116	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R117	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R118	1-216-063-91	METAL GLAZE 3.9K 5% 1/10W	
R119	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R120	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R121	1-216-114-00	METAL GLAZE 510K 5% 1/10W	
R122	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
R123	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R124	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R125	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R126	1-216-063-91	METAL GLAZE 3.9K 5% 1/10W	
R127	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R128	1-216-098-00	METAL CHIP 110K 5% 1/10W	
R129	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R130	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R131	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R132	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R133	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R134	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R135	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	

Ref. No.	Part No.	Description	Remark
R136	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R137	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R138	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R156	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R157	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R158	1-216-001-00	METAL CHIP 10 5% 1/10W	
R159	1-216-121-91	METAL GLAZE 1M 5% 1/10W	
R161	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
R162	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R163	1-216-121-91	METAL GLAZE 1M 5% 1/10W	
R164	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R165	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R166	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R167	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R168	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R169	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R170	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R171	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R172	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R173	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R174	1-216-033-00	METAL CHIP 220 5% 1/10W	
R175	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R176	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R177	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R178	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R179	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R180	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R181	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R188	1-216-037-00	METAL CHIP 330 5% 1/10W	
R190	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
R191	1-216-105-91	METAL GLAZE 220K 5% 1/10W	
		< SWITCH >	
S101	1-572-085-11	SWITCH, LEAF (LIMIT)	
		< VIBRATOR >	
X101	1-767-408-21	VIBRATOR, CRYSTAL (16.9344MHz)	

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Ref. No.	Part No.	Description	Remark
*	1-664-023-11	CD SW BOARD ************	
		< CONNECTOR >	
* CN602	1-568-824-11	SOCKET, CONNECTOR 5P	
CN606	1-568-853-11	SOCKET, CONNECTOR 10P	
		< DIODE >	
D626	8-719-056-13	DIODE SML79423C-TP15	(DISC IN/PLAY: DISC 1)
D627	8-719-056-13	DIODE SML79423C-TP15	(DISC IN/PLAY: DISC 1)

Ref. No.	Part No.	Description	Remark
D628	8-719-056-13	DIODE SML79423C-TP15 (DISC IN/PLAY: DISC 2)	
D629	8-719-056-13	DIODE SML79423C-TP15 (DISC IN/PLAY: DISC 2)	
D630	8-719-056-13	DIODE SML79423C-TP15 (DISC IN/PLAY: DISC 3)	
D631	8-719-056-13	DIODE SML79423C-TP15 (DISC IN/PLAY: DISC 3)	
D632	8-719-058-03	DIODE SEL5423E-TP15 (▷)	
D633	8-719-057-97	DIODE SEL5923A-TP15 (▯▯)	
		< TRANSISTOR >	
Q612	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q613	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q614	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q616	8-729-119-76	TRANSISTOR 2SA1175-HFE	
		< RESISTOR >	
R709	1-249-401-11	CARBON 47 5% 1/4W	
R710	1-249-413-11	CARBON 470 5% 1/4W	
R711	1-249-409-11	CARBON 220 5% 1/4W	
R712	1-249-411-11	CARBON 330 5% 1/4W	
R713	1-249-413-11	CARBON 470 5% 1/4W	
R714	1-249-415-11	CARBON 680 5% 1/4W	
R715	1-249-417-11	CARBON 1K 5% 1/4W	
R716	1-249-419-11	CARBON 1.5K 5% 1/4W	
R717	1-249-421-11	CARBON 2.2K 5% 1/4W	
R718	1-247-804-11	CARBON 75 5% 1/4W	
R719	1-247-804-11	CARBON 75 5% 1/4W	
R720	1-247-804-11	CARBON 75 5% 1/4W	
R721	1-247-804-11	CARBON 75 5% 1/4W	
R722	1-247-804-11	CARBON 75 5% 1/4W	
R723	1-247-804-11	CARBON 75 5% 1/4W	
R724	1-247-807-31	CARBON 100 5% 1/4W	
R725	1-247-807-31	CARBON 100 5% 1/4W	
R791	1-247-804-11	CARBON 75 5% 1/4W	
R792	1-247-804-11	CARBON 75 5% 1/4W	
R793	1-247-804-11	CARBON 75 5% 1/4W	
R794	1-247-804-11	CARBON 75 5% 1/4W	
R795	1-247-804-11	CARBON 75 5% 1/4W	
R796	1-247-804-11	CARBON 75 5% 1/4W	
		< SWITCH >	
S645	1-554-303-21	SWITCH, TACTILE (POWER)	
S646	1-554-303-21	SWITCH, TACTILE (|◁◁ ◀◀)	
S647	1-554-303-21	SWITCH, TACTILE (▶▶ ▷▷|)	
S648	1-554-303-21	SWITCH, TACTILE (DISC SKIP EX-CHANGE)	
S649	1-554-303-21	SWITCH, TACTILE (DISC 1)	
S650	1-554-303-21	SWITCH, TACTILE (DISC 2)	
S651	1-554-303-21	SWITCH, TACTILE (DISC 3)	
S652	1-554-303-21	SWITCH, TACTILE (■)	
S653	1-554-303-21	SWITCH, TACTILE (⏏ OPEN/CLOSE)	
S654	1-554-303-21	SWITCH, TACTILE (▷ ▯▯)	

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Ref. No.	Part No.	Description	Remark
*	1-658-575-11	CONNECTOR BOARD ****************	
		< CONNECTOR >	
* CN701	1-568-946-11	PIN, CONNECTOR 8P	
CN702	1-750-413-11	CONNECTOR, FFC/FPC 8P	
		< TRANSISTOR >	
Q701	8-729-900-80	TRANSISTOR DTC114ES	
		< RESISTOR >	
R703	1-249-435-11	CARBON 33K 5% 1/4W	
R704	1-249-429-11	CARBON 10K 5% 1/4W	
R705	1-249-417-11	CARBON 1K 5% 1/4W	

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Ref. No.	Part No.	Description	Remark
*	1-664-028-11	DECO BOARD ***********	
		< CONNECTOR >	
* CN605	1-568-848-11	SOCKET, CONNECTOR 5P	
		< DIODE >	
D619	8-719-058-04	DIODE SEL5223S-TP15 (RIGHT)	
D620	8-719-058-04	DIODE SEL5223S-TP15 (RIGHT)	
D621	8-719-058-04	DIODE SEL5223S-TP15 (CENTER)	
D622	8-719-058-03	DIODE SEL5423E-TP15 (CENTER)	
D623	8-719-058-04	DIODE SEL5223S-TP15 (CENTER)	
D624	8-719-058-04	DIODE SEL5223S-TP15 (LEFT)	
D625	8-719-058-04	DIODE SEL5223S-TP15 (LEFT)	
		< TRANSISTOR >	
Q610	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q611	8-729-119-76	TRANSISTOR 2SA1175-HFE	
		< RESISTOR >	
R706	1-247-807-31	CARBON 100 5% 1/4W	
R707	1-247-807-31	CARBON 100 5% 1/4W	
R708	1-247-807-31	CARBON 100 5% 1/4W	
R746	1-247-807-31	CARBON 100 5% 1/4W	

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Ref. No.	Part No.	Description	Remark
*	1-664-088-11	DJ BOARD *********	
		< CAPACITOR >	
C401	1-164-159-11	CERAMIC 0.1uF 50V	
C402	1-126-967-11	ELECT 47uF 20% 10V	

Ref. No.	Part No.	Description			Remark
C403	1-126-963-11	ELECT	4.7uF	20%	50V
C404	1-164-159-11	CERAMIC	0.1uF		50V
C407	1-126-963-11	ELECT	4.7uF	20%	50V
		< CONNECTOR >			
* CN401	1-564-788-11	PIN, CONNECTOR 10P			
		< IC >			
IC401	8-759-447-25	IC MSM6653A-485RS			
		< INDUCTOR >			
L401	1-410-515-11	INDUCTOR 33uH			
		< TRANSISTOR >			
Q401	8-729-900-36	TRANSISTOR DTC124ES			
		< RESISTOR >			
R401	1-249-429-11	CARBON	10K	5%	1/4W
R402	1-247-807-31	CARBON	100	5%	1/4W
R403	1-247-807-31	CARBON	100	5%	1/4W
R404	1-247-807-31	CARBON	100	5%	1/4W
R405	1-247-807-31	CARBON	100	5%	1/4W
R406	1-247-807-31	CARBON	100	5%	1/4W
R407	1-247-807-31	CARBON	100	5%	1/4W
R408	1-247-807-31	CARBON	100	5%	1/4W
R411	1-247-807-31	CARBON	100	5%	1/4W
R412	1-249-441-11	CARBON	100K	5%	1/4W
R413	1-249-429-11	CARBON	10K	5%	1/4W
		< VIBRATOR >			
X401	1-767-353-11	VIBRATOR, CERAMIC (4.09MHz)			

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Ref. No.	Part No.	Description			Remark
*	1-664-025-11	HP/MIC BOARD *************			
	1-690-880-11	LEAD (WITH CONNECTOR)			
		< CAPACITOR >			
C750	1-162-294-31	CERAMIC	0.001uF	10%	50V
C751	1-162-294-31	CERAMIC	0.001uF	10%	50V
C752	1-164-159-11	CERAMIC	0.1uF		50V
C753	1-164-159-11	CERAMIC	0.1uF		50V
C754	1-162-306-11	CERAMIC	0.01uF	20%	16V
C755	1-126-961-11	ELECT	2.2uF	20%	50V
C756	1-162-294-31	CERAMIC	0.001uF	10%	50V
C757	1-162-215-31	CERAMIC	47PF	5%	50V
C758	1-126-964-11	ELECT	10uF	20%	50V
C759	1-126-959-11	ELECT	0.47uF	20%	50V
C760	1-162-215-31	CERAMIC	47PF	5%	50V
C761	1-162-282-31	CERAMIC	100PF	10%	50V
C762	1-126-961-11	ELECT	2.2uF	20%	50V
C764	1-126-964-11	ELECT	10uF	20%	50V
C765	1-126-960-11	ELECT	1uF	20%	50V (GR8: EA3)
C766	1-162-305-11	CERAMIC	0.0068uF	20%	16V (GR8: EA3)
C767	1-162-294-31	CERAMIC	0.001uF	10%	50V (GR8: EA3)
C768	1-136-495-11	FILM	0.068uF	5%	50V (GR8: EA3)
C769	1-126-957-11	ELECT	0.22uF	20%	50V (GR8: EA3)
C770	1-126-957-11	ELECT	0.22uF	20%	50V (GR8: EA3)
C771	1-126-967-11	ELECT	47uF	20%	10V (GR8: EA3)
C772	1-164-159-11	CERAMIC	0.1uF		50V (GR8: EA3)
C773	1-104-664-11	ELECT	47uF	20%	25V (GR8: EA3)
C774	1-136-495-11	FILM	0.068uF	5%	50V (GR8: EA3)
C775	1-162-305-11	CERAMIC	0.0068uF	20%	16V (GR8: EA3)
C776	1-162-294-31	CERAMIC	0.001uF	10%	50V (GR8: EA3)
C777	1-136-167-00	FILM	0.15uF	5%	50V (GR8: EA3)
C778	1-126-960-11	ELECT	1uF	20%	50V (GR8: EA3)
C779	1-161-494-00	CERAMIC	0.022uF		25V (GR8: EA3)
C780	1-126-961-11	ELECT	2.2uF	20%	50V (GR8: EA3)
C782	1-162-290-31	CERAMIC	470PF	10%	50V
		< CONNECTOR >			
* CN750	1-568-828-11	SOCKET, CONNECTOR 9P			
		< DIODE >			
D751	8-719-024-99	DIODE 11ES2-NTA2B (GR8: EA3)			
D752	8-719-024-99	DIODE 11ES2-NTA2B (GR8: EA3)			
D753	8-719-024-99	DIODE 11ES2-NTA2B (GR8: EA3)			
		< IC >			
IC750	8-759-634-51	IC M5218AP			
IC751	8-759-450-96	IC M65850P (GR8: EA3)			
		< JACK >			
J750	1-569-112-21	JACK, LARGE TYPE (PHONES)			
J751	1-569-112-21	JACK, LARGE TYPE (MIX MIC)			

< INDUCTOR >

Ref. No.	Part No.	Description	Remark
L751	1-410-521-11	INDUCTOR 100uH	(GR8: EA3)

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R750	1-249-429-11	CARBON 10K 5% 1/4W	
R751	1-249-417-11	CARBON 1K 5% 1/4W	
R752	1-249-441-11	CARBON 100K 5% 1/4W	
R753	1-249-417-11	CARBON 1K 5% 1/4W	
R754	1-249-433-11	CARBON 22K 5% 1/4W	
R755	1-249-429-11	CARBON 10K 5% 1/4W	
R756	1-247-885-00	CARBON 180K 5% 1/4W	
R757	1-247-807-31	CARBON 100 5% 1/4W	
R758	1-249-433-11	CARBON 22K 5% 1/4W	(GR8: EA3)
R759	1-249-433-11	CARBON 22K 5% 1/4W	(GR8: EA3)
R760	1-249-433-11	CARBON 22K 5% 1/4W	(GR8: EA3)
R761	1-247-881-00	CARBON 120K 5% 1/4W	(GR8: EA3)
R762	1-249-433-11	CARBON 22K 5% 1/4W	(GR8: EA3)
R763	1-249-433-11	CARBON 22K 5% 1/4W	(GR8: EA3)
R764	1-249-433-11	CARBON 22K 5% 1/4W	(GR8: EA3)
R765	1-249-437-11	CARBON 47K 5% 1/4W	(GR8: EA3)
R766	1-249-431-11	CARBON 15K 5% 1/4W	(GR8: EA3)
R767	1-249-431-11	CARBON 15K 5% 1/4W	(GR8: EA3)

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV750	1-223-983-11	RES, VAR, CARBON 50K (MIC LEVEL)	
RV751	1-223-983-11	RES, VAR, CARBON 50K (ECHO LEVEL)	(GR8: EA3)

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Ref. No.	Part No.	Description	Remark
*	1-650-669-11	LEAF SWITCH BOARD	

****

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
* CN1001	1-568-854-11	SOCKET, CONNECTOR 11P	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q1001	8-749-010-90	TRANSISTOR PHOTO REFLECTOR NJL5165KA-H2	
Q1002	8-749-010-90	TRANSISTOR PHOTO REFLECTOR NJL5165KA-H2	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R1001	1-247-818-11	CARBON 300 5% 1/4W	
R1002	1-247-820-11	CARBON 360 5% 1/4W	
R1003	1-249-414-11	CARBON 560 5% 1/4W	
R1004	1-247-834-11	CARBON 1.3K 5% 1/4W	
R1005	1-247-818-11	CARBON 300 5% 1/4W	

< SWITCH >

Ref. No.	Part No.	Description	Remark
S1001	1-692-832-11	SWITCH, PUSH (1 KEY) (A PLAY)	
S1002	1-692-832-11	SWITCH, PUSH (1 KEY) (B PLAY)	
S1004	1-571-281-21	SWITCH, LEAF (A HALF)	
S1005	1-571-281-21	SWITCH, LEAF (A CrO2)	
S1006	1-572-248-11	SWITCH, LEAF (REC A)	
S1007	1-572-248-11	SWITCH, LEAF (B HALF)	
S1008	1-571-281-21	SWITCH, LEAF (B CrO2)	
S1009	1-571-281-21	SWITCH, LEAF (REC B)	

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Ref. No.	Part No.	Description	Remark
*	A-4398-179-A	MAIN BOARD, COMPLETE (GR8: EA3, MY)	
*	A-4392-820-A	MAIN BOARD, COMPLETE (GR8: EA4, TH)	
*	A-4392-834-A	MAIN BOARD, COMPLETE (GR8: SAF)	
*	A-4392-362-A	MAIN BOARD, COMPLETE (GR8: AUS)	
*	A-4392-361-A	MAIN BOARD, COMPLETE (GR8: E2, MX)	
*	A-4392-360-A	MAIN BOARD, COMPLETE (GR8: E3, HK, IA, SP, TW)	
*	A-4392-491-A	MAIN BOARD, COMPLETE (GR8: JE)	
*	A-4392-358-A	MAIN BOARD, COMPLETE (RX90: AEP, G, UK, AED)	
*	A-4392-359-A	MAIN BOARD, COMPLETE (RX90: EE, CIS)	

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Ref. No.	Part No.	Description	Remark
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C109	1-164-159-11	CERAMIC 0.1uF 50V	
C121	1-162-286-31	CERAMIC 220PF 10% 50V	
C122	1-162-286-31	CERAMIC 220PF 10% 50V	
C123	1-162-306-11	CERAMIC 0.01uF 20% 16V	
C131	1-136-495-11	FILM 0.068uF 5% 50V	(RX90)
C132	1-136-495-11	FILM 0.068uF 5% 50V	(RX90)
C133	1-162-294-31	CERAMIC 0.001uF 10% 50V	(RX90)
C171	1-162-286-31	CERAMIC 220PF 10% 50V	
C172	1-162-286-31	CERAMIC 220PF 10% 50V	
C173	1-162-306-11	CERAMIC 0.01uF 20% 16V	
C181	1-136-495-11	FILM 0.068uF 5% 50V	(RX90)
C182	1-136-495-11	FILM 0.068uF 5% 50V	(RX90)
C183	1-162-294-31	CERAMIC 0.001uF 10% 50V	(RX90)

Ref. No.	Part No.	Description				Remark
C191	1-126-963-11	ELECT	4.7uF	20%	50V	
C192	1-164-159-11	CERAMIC	0.1uF		50V	
C201	1-136-169-00	FILM	0.22uF	5%	50V	
C202	1-136-169-00	FILM	0.22uF	5%	50V	
C203	1-130-493-00	MYLAR	0.068uF	5%	50V	
C204	1-130-493-00	MYLAR	0.068uF	5%	50V	
C205	1-130-486-00	MYLAR	0.018uF	10%	50V	
C206	1-130-486-00	MYLAR	0.018uF	10%	50V	
C207	1-130-480-00	MYLAR	0.0056uF	5%	50V	
C208	1-130-479-00	MYLAR	0.0047uF	5%	50V	
C209	1-130-474-00	MYLAR	0.0018uF	5%	50V	
C210	1-126-964-11	ELECT	10uF	20%	50V	
C211	1-126-964-11	ELECT	10uF	20%	50V	
C212	1-130-483-00	MYLAR	0.01uF	5%	50V	
C213	1-136-165-00	FILM	0.1uF	5%	50V	
C214	1-136-165-00	FILM	0.1uF	5%	50V	
C215	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C216	1-136-167-00	FILM	0.15uF	5%	50V	
C221	1-126-967-11	ELECT	47uF	20%	10V	
C222	1-126-967-11	ELECT	47uF	20%	10V	
C223	1-126-964-11	ELECT	10uF	20%	50V	
C224	1-162-290-31	CERAMIC	470PF	10%	50V	
C226	1-126-964-11	ELECT	10uF	20%	50V	
C231	1-126-960-11	ELECT	1uF	20%	50V	
C241	1-126-964-11	ELECT	10uF	20%	50V	
C242	1-162-292-31	CERAMIC	680PF	10%	50V	
C243	1-126-964-11	ELECT	10uF	20%	50V	
C244	1-162-286-31	CERAMIC	220PF	10%	50V	
C245	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C246	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C247	1-162-306-11	CERAMIC	0.01uF	20%	16V	(RX90)
C251	1-136-169-00	FILM	0.22uF	5%	50V	
C252	1-136-169-00	FILM	0.22uF	5%	50V	
C253	1-130-493-00	MYLAR	0.068uF	5%	50V	
C254	1-130-493-00	MYLAR	0.068uF	5%	50V	
C255	1-130-486-00	MYLAR	0.018uF	10%	50V	
C256	1-130-486-00	MYLAR	0.018uF	10%	50V	
C257	1-130-480-00	MYLAR	0.0056uF	5%	50V	
C258	1-130-479-00	MYLAR	0.0047uF	5%	50V	
C259	1-130-474-00	MYLAR	0.0018uF	5%	50V	
C260	1-126-964-11	ELECT	10uF	20%	50V	
C261	1-126-964-11	ELECT	10uF	20%	50V	
C262	1-130-483-00	MYLAR	0.01uF	5%	50V	
C263	1-136-165-00	FILM	0.1uF	5%	50V	
C264	1-136-165-00	FILM	0.1uF	5%	50V	
C276	1-126-964-11	ELECT	10uF	20%	50V	
C281	1-126-933-11	ELECT	100uF	20%	10V	
C282	1-126-961-11	ELECT	2.2uF	20%	50V	
C283	1-126-933-11	ELECT	100uF	20%	10V	
C284	1-126-923-11	ELECT	220uF	20%	10V	

Ref. No.	Part No.	Description				Remark
C291	1-126-959-11	ELECT	0.47uF	20%	50V	
C301	1-126-967-11	ELECT	47uF	20%	10V	
C302	1-164-159-11	CERAMIC	0.1uF		50V	
C303	1-136-165-00	FILM	0.1uF	5%	50V	
C304	1-126-926-11	ELECT	1000uF	20%	10V	
C305	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C309	1-102-514-11	CERAMIC	22PF	5%	50V	
C310	1-102-514-11	CERAMIC	22PF	5%	50V	
C311	1-164-159-11	CERAMIC	0.1uF		50V	
C315	1-126-933-11	ELECT	100uF	20%	10V	
C316	1-136-165-00	FILM	0.1uF	5%	50V	
C390	1-126-933-11	ELECT	100uF	20%	10V	
C391	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C392	1-126-933-11	ELECT	100uF	20%	10V	
C393	1-126-925-11	ELECT	470uF	20%	10V	
C394	1-164-159-11	CERAMIC	0.1uF		50V	
C395	1-162-282-31	CERAMIC	100PF	10%	50V	
C396	1-126-961-11	ELECT	2.2uF	20%	50V	
C398	1-126-961-11	ELECT	2.2uF	20%	50V	
C903	1-136-165-00	FILM	0.1uF	5%	50V	
C904	1-128-547-11	ELECT	6800uF	20%	16V	(GR8)
C904	1-126-937-11	ELECT	4700uF	20%	16V	(RX90)
C906	1-126-923-11	ELECT	220uF	20%	10V	(GR8)
C906	1-126-933-11	ELECT	100uF	20%	10V	(RX90)
C909	1-126-964-11	ELECT	10uF	20%	50V	
C910	1-126-933-11	ELECT	100uF	20%	10V	
C911	1-126-964-11	ELECT	10uF	20%	50V	
C912	1-126-916-11	ELECT	1000uF	20%	6.3V	
C913	1-126-943-11	ELECT	2200uF	20%	25V	
C914	1-126-767-11	ELECT	1000uF	20%	16V	
C915	1-126-967-11	ELECT	47uF	20%	16V	
C916	1-164-159-11	CERAMIC	0.1uF		50V	
C917	1-126-968-11	ELECT	100uF	20%	50V	
C918	1-126-968-11	ELECT	100uF	20%	50V	
C919	1-126-964-11	ELECT	10uF	20%	50V	
C920	1-126-947-11	ELECT	47uF	20%	35V	
C953	1-136-165-00	FILM	0.1uF	5%	50V	
C954	1-126-768-11	ELECT	2200uF	20%	16V	
C956	1-126-923-11	ELECT	220uF	20%	10V	(GR8)
C956	1-126-933-11	ELECT	100uF	20%	10V	(RX90)
C1501	1-130-479-00	MYLAR	0.0047uF	5%	50V	
C1502	1-162-290-31	CERAMIC	470PF	10%	50V	
C1503	1-164-159-11	CERAMIC	0.1uF		50V	
C1504	1-126-160-11	ELECT	1uF	20%	50V	
C1505	1-126-964-11	ELECT	10uF	20%	50V	
C1506	1-126-157-11	ELECT	10uF	20%	16V	
C1507	1-126-160-11	ELECT	1uF	20%	50V	
C1508	1-126-933-11	ELECT	100uF	20%	10V	
C1522	1-126-964-11	ELECT	10uF	20%	50V	

MAIN

Ref. No.	Part No.	Description	Remark
C1523	1-126-933-11	ELECT 100uF 20% 16V	
C1531	1-164-159-11	CERAMIC 0.1uF 50V	
C1532	1-164-159-11	CERAMIC 0.1uF 50V	
C1533	1-164-159-11	CERAMIC 0.1uF 50V	
C1534	1-126-935-11	ELECT 470uF 20% 16V	
C1551	1-130-479-00	MYLAR 0.0047uF 5% 50V	
C1552	1-162-290-31	CERAMIC 470PF 10% 50V	
C1553	1-164-159-11	CERAMIC 0.1uF 50V	
C1554	1-126-960-11	ELECT 1uF 20% 50V	
C1555	1-126-964-11	ELECT 10uF 20% 50V	
C1556	1-126-964-11	ELECT 10uF 20% 50V	
C1557	1-126-960-11	ELECT 1uF 20% 50V	
C1558	1-126-933-11	ELECT 100uF 20% 10V	
		< CONNECTOR >	
CN101	1-778-982-11	CONNECTOR, BOARD TO BOARD 13P	
* CN102	1-568-836-11	SOCKET, CONNECTOR 17P	
CN105	1-564-506-11	PLUG, CONNECTOR 3P	
* CN201	1-568-834-11	SOCKET, CONNECTOR 15P (GR8: EA3, MY, SAF, E3, HK, IA, JE, SP, TW/RX90)	
* CN201	1-568-832-11	SOCKET, CONNECTOR 13P (GR8: EA4, TH, AUS, E2, MX)	
* CN202	1-568-862-11	SOCKET, CONNECTOR 19P	
* CN203	1-568-946-11	PIN, CONNECTOR 8P	
* CN204	1-568-947-11	PIN, CONNECTOR 9P	
CN205	1-568-838-11	SOCKET, CONNECTOR 21P	
* CN206	1-568-830-11	SOCKET, CONNECTOR 11P	
* CN207	1-568-449-11	HOUSING, CONNECTOR(PC BOARD)3P	
		< DIODE >	
D141	8-719-987-63	DIODE 1N4148M	
D142	8-719-987-63	DIODE 1N4148M	
D143	8-719-987-63	DIODE 1N4148M	
D144	8-719-987-63	DIODE 1N4148M	
D145	8-719-987-63	DIODE 1N4148M	
D146	8-719-987-63	DIODE 1N4148M	
D147	8-719-987-63	DIODE 1N4148M	
D191	8-719-815-85	DIODE 1S1585	
D192	8-719-815-85	DIODE 1S1585	
D193	8-719-815-85	DIODE 1S1585	
D194	8-719-815-85	DIODE 1S1585	
D281	8-719-815-85	DIODE 1S1585	
D291	8-719-987-63	DIODE 1N4148M	
D301	8-719-024-99	DIODE 11ES2-NTA2B	
D302	8-719-024-99	DIODE 11ES2-NTA2B	
D303	8-719-987-63	DIODE 1N4148M	
D304	8-719-987-63	DIODE 1N4148M	
D305	8-719-987-63	DIODE 1N4148M	
D306	8-719-987-63	DIODE 1N4148M	

Ref. No.	Part No.	Description	Remark
D307	8-719-987-63	DIODE 1N4148M	
D902	8-719-024-99	DIODE 11ES2-NTA2B	
D903	8-719-024-99	DIODE 11ES2-NTA2B	
D904	8-719-024-99	DIODE 11ES2-NTA2B	
D905	8-719-024-99	DIODE 11ES2-NTA2B	
D906	8-719-024-99	DIODE 11ES2-NTA2B	
D907	8-719-024-99	DIODE 11ES2-NTA2B	
D908	8-719-024-99	DIODE 11ES2-NTA2B	
D909	8-719-024-99	DIODE 11ES2-NTA2B	
D910	8-719-011-18	DIODE UZ-33BSC	
D911	8-719-010-43	DIODE UZ-5.6BSC	
D912	8-719-987-63	DIODE 1N4148M	
D913	8-719-024-99	DIODE 11ES2-NTA2B	
D914	8-719-024-99	DIODE 11ES2-NTA2B	
D915	8-719-001-42	DIODE UZL-11M1	
D951	8-719-987-63	DIODE 1N4148M	
D952	8-719-987-63	DIODE 1N4148M	
		< GROUND PLATE >	
* EPT101	4-870-539-11	PLATE, GROUND (EXCEPT GR8: EA4, TH, SAF)	
* EPT101	4-870-539-00	PLATE, GROUND (GR8: EA4, TH, SAF)	
		< INDUCTOR >	
FB302	1-412-473-21	INDUCTOR (SMALL TYPE)	
		< IC >	
IC102	8-759-000-48	IC MC14052BCP	
IC201	8-759-460-02	IC M62427FP-A	
IC202	8-759-634-50	IC M5218AL	
IC231	8-759-634-50	IC M5218AL	
IC241	8-759-634-50	IC M5218AL	
IC281	8-759-111-68	IC uPC1237HA	
IC301	8-759-447-26	IC uPD780018YGF-011-3BA	
IC302	8-759-635-63	IC M51943BSL	
IC391	8-749-923-04	IC TOTX178	
IC901	8-759-288-53	IC LA5617	
IC902	8-759-604-86	IC M5F7807L	
IC903	8-759-231-53	IC TA7805S	
IC904	8-759-231-58	IC TA7812S	
IC1501	8-759-363-21	IC HA12203NT	
IC1502	8-759-822-09	IC LB1641	
		< JACK >	
J101	1-695-188-31	JACK, PIN 4P (VIDEO/MD, IN/OUT)	
J241	1-774-785-11	JACK, PIN 1P (SUPER WOOFER)	
		< COIL >	
L131	1-420-872-00	COIL, AIR-CORE (RX90)	
L181	1-420-872-00	COIL, AIR-CORE (RX90)	
L301	1-410-509-11	INDUCTOR 10uH	
L392	1-410-521-11	INDUCTOR 100uH	

Ref. No.	Part No.	Description				Remark
L393	1-410-515-11	INDUCTOR	33uH			
		< TRANSISTOR >				
Q101	8-729-141-30	TRANSISTOR	2SC3623A-LK			
Q102	8-729-900-63	TRANSISTOR	DTA124ES			
Q103	8-729-900-36	TRANSISTOR	DTC124ES			
Q141	8-729-140-82	TRANSISTOR	2SA988-PAFAEA			
Q142	8-729-140-84	TRANSISTOR	2SC1841-PAFAEA			
Q143	8-729-140-82	TRANSISTOR	2SA988-PAFAEA			
Q144	8-729-140-84	TRANSISTOR	2SC1841-PAFAEA			
Q145	8-729-140-84	TRANSISTOR	2SC1841-PAFAEA			
Q151	8-729-141-30	TRANSISTOR	2SC3623A-LK			
Q191	8-729-119-76	TRANSISTOR	2SA1175-HFE			
Q192	8-729-111-29	TRANSISTOR	2SD1616A-K			
Q202	8-729-119-78	TRANSISTOR	2SC403SP-51			
Q203	8-729-119-78	TRANSISTOR	2SC403SP-51			
Q204	8-729-141-30	TRANSISTOR	2SC3623A-LK			
Q205	8-729-141-30	TRANSISTOR	2SC3623A-LK			
Q231	8-729-900-63	TRANSISTOR	DTA124ES			
Q232	8-729-900-63	TRANSISTOR	DTA124ES			
Q241	8-729-141-30	TRANSISTOR	2SC3623A-LK			
Q252	8-729-119-78	TRANSISTOR	2SC403SP-51			
Q253	8-729-119-78	TRANSISTOR	2SC403SP-51			
Q254	8-729-141-30	TRANSISTOR	2SC3623A-LK			
Q281	8-729-900-36	TRANSISTOR	DTC124ES			
Q282	8-729-900-63	TRANSISTOR	DTA124ES			
Q283	8-729-900-36	TRANSISTOR	DTC124ES			
Q301	8-729-119-78	TRANSISTOR	2SC403SP-51			
Q309	8-729-900-63	TRANSISTOR	DTA124ES			
Q901	8-729-040-20	TRANSISTOR	RT1P137L-TP			
Q902	8-729-900-36	TRANSISTOR	DTC124ES			
Q903	8-729-030-18	TRANSISTOR	2SD2525			
Q904	8-729-030-19	TRANSISTOR	2SB1640			
Q905	8-729-040-20	TRANSISTOR	RT1P137L-TP			
Q906	8-729-900-63	TRANSISTOR	DTA124ES			
Q907	8-729-119-78	TRANSISTOR	2SC403SP-51			
Q1531	8-729-801-93	TRANSISTOR	2SD1387			
Q1532	8-729-900-80	TRANSISTOR	DTC114ES			
Q1533	8-729-900-80	TRANSISTOR	DTC114ES			
Q1534	8-729-119-77	TRANSISTOR	2SA1175-FEK			
Q1535	8-729-900-80	TRANSISTOR	DTC114ES			
		< RESISTOR >				
R121	1-249-424-11	CARBON	3.9K	5%	1/4W	
R122	1-247-887-00	CARBON	220K	5%	1/4W	
R123	1-249-426-11	CARBON	5.6K	5%	1/4W	
R124	1-249-429-11	CARBON	10K	5%	1/4W	
R125	1-249-441-11	CARBON	100K	5%	1/4W	
R126	1-249-417-11	CARBON	1K	5%	1/4W	
R127	1-249-441-11	CARBON	100K	5%	1/4W	

Ref. No.	Part No.	Description				Remark
R131	1-260-076-11	CARBON	10	5%	1/2W	(RX90)
R132	1-260-076-11	CARBON	10	5%	1/2W	(RX90)
R133	1-260-091-11	CARBON	220	5%	1/2W	
R134	1-260-091-11	CARBON	220	5%	1/2W	
R135	1-249-441-11	CARBON	100K	5%	1/4W	
R136	1-249-441-11	CARBON	100K	5%	1/4W	
R140	1-249-429-11	CARBON	10K	5%	1/4W	
R141	1-249-437-11	CARBON	47K	5%	1/4W	
R142	1-249-429-11	CARBON	10K	5%	1/4W	
R143	1-249-429-11	CARBON	10K	5%	1/4W	
R144	1-249-437-11	CARBON	47K	5%	1/4W	
R145	1-249-429-11	CARBON	10K	5%	1/4W	
R146	1-249-429-11	CARBON	10K	5%	1/4W	
⚠R147	1-216-457-00	METAL OXIDE	1.2K	5%	2W	F
⚠R148	1-216-457-00	METAL OXIDE	1.2K	5%	2W	F
⚠R149	1-216-457-00	METAL OXIDE	1.2K	5%	2W	F
R171	1-249-424-11	CARBON	3.9K	5%	1/4W	
R172	1-247-887-00	CARBON	220K	5%	1/4W	
R173	1-249-426-11	CARBON	5.6K	5%	1/4W	
R174	1-249-429-11	CARBON	10K	5%	1/4W	
R176	1-249-417-11	CARBON	1K	5%	1/4W	
R177	1-249-441-11	CARBON	100K	5%	1/4W	
R181	1-260-076-11	CARBON	10	5%	1/2W	(RX90)
R182	1-260-076-11	CARBON	10	5%	1/2W	(RX90)
R183	1-260-091-11	CARBON	220	5%	1/2W	
R184	1-260-091-11	CARBON	220	5%	1/2W	
R191	1-249-425-11	CARBON	4.7K	5%	1/4W	
R192	1-249-441-11	CARBON	100K	5%	1/4W	
R193	1-249-421-11	CARBON	2.2K	5%	1/4W	
R194	1-249-437-11	CARBON	47K	5%	1/4W	
R195	1-249-437-11	CARBON	47K	5%	1/4W	
R196	1-249-437-11	CARBON	47K	5%	1/4W	
R197	1-249-437-11	CARBON	47K	5%	1/4W	
R201	1-249-429-11	CARBON	10K	5%	1/4W	
R202	1-249-433-11	CARBON	22K	5%	1/4W	
R203	1-249-441-11	CARBON	100K	5%	1/4W	
R205	1-249-433-11	CARBON	22K	5%	1/4W	
R206	1-249-421-11	CARBON	2.2K	5%	1/4W	
R207	1-249-431-11	CARBON	15K	5%	1/4W	
R208	1-249-437-11	CARBON	47K	5%	1/4W	
R209	1-249-441-11	CARBON	100K	5%	1/4W	
R210	1-247-903-00	CARBON	1M	5%	1/4W	
R212	1-249-419-11	CARBON	1.5K	5%	1/4W	
R213	1-249-433-11	CARBON	22K	5%	1/4W	
R214	1-247-887-00	CARBON	220K	5%	1/4W	
R215	1-247-903-00	CARBON	1M	5%	1/4W	
R216	1-249-429-11	CARBON	10K	5%	1/4W	
R217	1-249-437-11	CARBON	47K	5%	1/4W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

MAIN

Ref. No.	Part No.	Description				Remark
R218	1-249-413-11	CARBON	470	5%	1/4W	
R219	1-249-429-11	CARBON	10K	5%	1/4W	
R221	1-249-425-11	CARBON	4.7K	5%	1/4W	
R222	1-249-425-11	CARBON	4.7K	5%	1/4W	
R223	1-249-421-11	CARBON	2.2K	5%	1/4W	
R225	1-249-422-11	CARBON	2.7K	5%	1/4W	
R226	1-249-421-11	CARBON	2.2K	5%	1/4W	
R227	1-249-441-11	CARBON	100K	5%	1/4W	
R228	1-249-429-11	CARBON	10K	5%	1/4W	
R231	1-249-437-11	CARBON	47K	5%	1/4W	
R232	1-249-437-11	CARBON	47K	5%	1/4W	
R234	1-247-886-11	CARBON	200K	5%	1/4W	
R235	1-249-421-11	CARBON	2.2K	5%	1/4W	
R236	1-249-441-11	CARBON	100K	5%	1/4W	
R241	1-249-437-11	CARBON	47K	5%	1/4W	
R242	1-247-843-11	CARBON	3.3K	5%	1/4W	
R243	1-249-429-11	CARBON	10K	5%	1/4W	
R244	1-249-417-11	CARBON	1K	5%	1/4W	
R245	1-249-441-11	CARBON	100K	5%	1/4W	
R246	1-249-417-11	CARBON	1K	5%	1/4W	
R247	1-249-429-11	CARBON	10K	5%	1/4W	
R253	1-249-441-11	CARBON	100K	5%	1/4W	
R257	1-249-431-11	CARBON	15K	5%	1/4W	
R258	1-249-437-11	CARBON	47K	5%	1/4W	
R259	1-249-441-11	CARBON	100K	5%	1/4W	
R260	1-247-903-00	CARBON	1M	5%	1/4W	
R262	1-249-419-11	CARBON	1.5K	5%	1/4W	
R263	1-249-433-11	CARBON	22K	5%	1/4W	
R264	1-247-887-00	CARBON	220K	5%	1/4W	
R265	1-247-903-00	CARBON	1M	5%	1/4W	
R266	1-249-429-11	CARBON	10K	5%	1/4W	
R267	1-249-437-11	CARBON	47K	5%	1/4W	
R271	1-249-425-11	CARBON	4.7K	5%	1/4W	
R272	1-249-425-11	CARBON	4.7K	5%	1/4W	
R273	1-249-421-11	CARBON	2.2K	5%	1/4W	
R275	1-249-422-11	CARBON	2.7K	5%	1/4W	
R276	1-249-421-11	CARBON	2.2K	5%	1/4W	
R277	1-249-441-11	CARBON	100K	5%	1/4W	
R278	1-249-429-11	CARBON	10K	5%	1/4W	
R281	1-249-429-11	CARBON	10K	5%	1/4W	
R282	1-249-429-11	CARBON	10K	5%	1/4W	
R283	1-249-435-11	CARBON	33K	5%	1/4W	
R284	1-249-397-11	CARBON	22	5%	1/4W	
R285	1-249-441-11	CARBON	100K	5%	1/4W	
R286	1-249-429-11	CARBON	10K	5%	1/4W	
R287	1-249-429-11	CARBON	10K	5%	1/4W	
R288	1-249-438-11	CARBON	56K	5%	1/4W	
R289	1-249-437-11	CARBON	47K	5%	1/4W	
R291	1-249-433-11	CARBON	22K	5%	1/4W	
R292	1-249-433-11	CARBON	22K	5%	1/4W	
R293	1-249-417-11	CARBON	1K	5%	1/4W	
R294	1-249-441-11	CARBON	100K	5%	1/4W	
R295	1-247-903-00	CARBON	1M	5%	1/4W	
R301	1-249-413-11	CARBON	470	5%	1/4W	
R302	1-249-425-11	CARBON	4.7K	5%	1/4W	
R303	1-249-437-11	CARBON	47K	5%	1/4W	
R304	1-249-437-11	CARBON	47K	5%	1/4W	
R305	1-249-429-11	CARBON	10K	5%	1/4W	
R309	1-249-421-11	CARBON	2.2K	5%	1/4W	
R310	1-249-441-11	CARBON	100K	5%	1/4W	
R313	1-247-807-31	CARBON	100	5%	1/4W	
R314	1-247-807-31	CARBON	100	5%	1/4W	(RX90: AEP, G, UK, AED)
R315	1-247-807-31	CARBON	100	5%	1/4W	(RX90: AEP, G, UK, AED)
R316	1-249-429-11	CARBON	10K	5%	1/4W	
R318	1-249-429-11	CARBON	10K	5%	1/4W	
R319	1-249-429-11	CARBON	10K	5%	1/4W	
R320	1-249-429-11	CARBON	10K	5%	1/4W	
R322	1-249-425-11	CARBON	4.7K	5%	1/4W	
R323	1-247-807-31	CARBON	100	5%	1/4W	
R325	1-249-431-11	CARBON	15K	5%	1/4W	(GR8: EA4, TH)
R325	1-249-425-11	CARBON	4.7K	5%	1/4W	(GR8: AUS)
R325	1-249-427-11	CARBON	6.8K	5%	1/4W	(GR8: E2, JE, MX/RX90: EE, CIS)
R325	1-247-843-11	CARBON	3.3K	5%	1/4W	(RX90: AEP, G, UK, AED)
R326	1-249-415-11	CARBON	680	5%	1/4W	(GR8: EA4, TH)
R326	1-249-427-11	CARBON	6.8K	5%	1/4W	(GR8: AUS/RX90: AEP, G, UK, AED)
R326	1-249-425-11	CARBON	4.7K	5%	1/4W	(GR8: E2, MX)
R326	1-247-843-11	CARBON	3.3K	5%	1/4W	(GR8: JE)
R326	1-249-435-11	CARBON	33K	5%	1/4W	(RX90: EE, CIS)
R327	1-247-807-31	CARBON	100	5%	1/4W	
R328	1-247-807-31	CARBON	100	5%	1/4W	
R330	1-247-807-31	CARBON	100	5%	1/4W	
R331	1-247-807-31	CARBON	100	5%	1/4W	
R332	1-247-807-31	CARBON	100	5%	1/4W	
R333	1-247-807-31	CARBON	100	5%	1/4W	
R334	1-247-807-31	CARBON	100	5%	1/4W	
R335	1-247-807-31	CARBON	100	5%	1/4W	
R336	1-247-807-31	CARBON	100	5%	1/4W	
R337	1-247-807-31	CARBON	100	5%	1/4W	
R338	1-247-807-31	CARBON	100	5%	1/4W	
R339	1-247-807-31	CARBON	100	5%	1/4W	
R340	1-247-807-31	CARBON	100	5%	1/4W	
R341	1-247-807-31	CARBON	100	5%	1/4W	

Ref. No.	Part No.	Description				Remark
R342	1-247-807-31	CARBON	100	5%	1/4W	
R343	1-247-807-31	CARBON	100	5%	1/4W	
R344	1-247-807-31	CARBON	100	5%	1/4W	
R345	1-247-807-31	CARBON	100	5%	1/4W	
R347	1-247-807-31	CARBON	100	5%	1/4W	
R348	1-247-807-31	CARBON	100	5%	1/4W	
R349	1-247-807-31	CARBON	100	5%	1/4W	
R350	1-247-807-31	CARBON	100	5%	1/4W	
R351	1-247-807-31	CARBON	100	5%	1/4W	
R352	1-247-807-31	CARBON	100	5%	1/4W	
R353	1-247-807-31	CARBON	100	5%	1/4W	
R354	1-247-807-31	CARBON	100	5%	1/4W	
R355	1-247-807-31	CARBON	100	5%	1/4W	
R356	1-247-807-31	CARBON	100	5%	1/4W	
R357	1-247-807-31	CARBON	100	5%	1/4W	
R358	1-247-807-31	CARBON	100	5%	1/4W	
R359	1-247-807-31	CARBON	100	5%	1/4W	
R361	1-247-807-31	CARBON	100	5%	1/4W	
R362	1-247-807-31	CARBON	100	5%	1/4W	
R363	1-247-807-31	CARBON	100	5%	1/4W	
R364	1-247-807-31	CARBON	100	5%	1/4W	
R366	1-247-807-31	CARBON	100	5%	1/4W	
R367	1-249-429-11	CARBON	10K	5%	1/4W	
R368	1-247-843-11	CARBON	3.3K	5%	1/4W	
R370	1-249-429-11	CARBON	10K	5%	1/4W	
R371	1-249-429-11	CARBON	10K	5%	1/4W	
R372	1-249-429-11	CARBON	10K	5%	1/4W	
R373	1-249-429-11	CARBON	10K	5%	1/4W	
R381	1-247-807-31	CARBON	100	5%	1/4W	
R384	1-249-429-11	CARBON	10K	5%	1/4W	
R385	1-249-429-11	CARBON	10K	5%	1/4W	
R395	1-247-807-31	CARBON	100	5%	1/4W	
R396	1-249-435-11	CARBON	33K	5%	1/4W	
R397	1-247-807-31	CARBON	100	5%	1/4W	
R398	1-249-435-11	CARBON	33K	5%	1/4W	
R417	1-249-441-11	CARBON	100K	5%	1/4W	
R913	1-249-409-11	CARBON	220	5%	1/4W	
R914	1-249-417-11	CARBON	1K	5%	1/4W	
R915	1-249-425-11	CARBON	4.7K	5%	1/4W	
R916	1-249-409-11	CARBON	220	5%	1/4W	
R917	1-249-409-11	CARBON	220	5%	1/4W	
R918	1-249-425-11	CARBON	4.7K	5%	1/4W	
R920	1-249-417-11	CARBON	1K	5%	1/4W	
R921	1-247-895-00	CARBON	470K	5%	1/4W	
R951	1-249-425-11	CARBON	4.7K	5%	1/4W	
R952	1-249-425-11	CARBON	4.7K	5%	1/4W	
R1501	1-249-435-11	CARBON	33K	5%	1/4W	
R1502	1-249-417-11	CARBON	1K	5%	1/4W	
R1503	1-249-426-11	CARBON	5.6K	5%	1/4W	
R1504	1-247-840-00	CARBON	2.4K	5%	1/4W	
R1505	1-249-433-11	CARBON	22K	5%	1/4W	

Ref. No.	Part No.	Description				Remark
R1506	1-249-421-11	CARBON	2.2K	5%	1/4W	
R1507	1-249-428-11	CARBON	8.2K	5%	1/4W	
R1521	1-249-430-11	CARBON	12K	5%	1/4W	
R1522	1-249-426-11	CARBON	5.6K	5%	1/4W	
R1524	1-249-429-11	CARBON	10K	5%	1/4W	
R1525	1-249-432-11	CARBON	18K	5%	1/4W	
R1526	1-249-429-11	CARBON	10K	5%	1/4W	
R1527	1-249-429-11	CARBON	10K	5%	1/4W	
R1531	1-247-843-11	CARBON	3.3K	5%	1/4W	
R1532	1-249-411-11	CARBON	330	5%	1/4W	
R1533	1-249-427-11	CARBON	6.8K	5%	1/4W	
R1534	1-249-429-11	CARBON	10K	5%	1/4W	
R1535	1-249-425-11	CARBON	4.7K	5%	1/4W	
R1536	1-249-425-11	CARBON	4.7K	5%	1/4W	
R1541	1-249-425-11	CARBON	4.7K	5%	1/4W	
R1542	1-249-425-11	CARBON	4.7K	5%	1/4W	
R1543	1-249-425-11	CARBON	4.7K	5%	1/4W	
R1544	1-249-417-11	CARBON	1K	5%	1/4W	
R1545	1-249-437-11	CARBON	47K	5%	1/4W	
R1546	1-249-437-11	CARBON	47K	5%	1/4W	
R1547	1-249-437-11	CARBON	47K	5%	1/4W	
R1548	1-249-437-11	CARBON	47K	5%	1/4W	
R1551	1-249-433-11	CARBON	22K	5%	1/4W	
R1552	1-249-417-11	CARBON	1K	5%	1/4W	
R1553	1-249-426-11	CARBON	5.6K	5%	1/4W	
R1554	1-247-840-00	CARBON	2.4K	5%	1/4W	
R1555	1-249-433-11	CARBON	22K	5%	1/4W	
R1556	1-249-421-11	CARBON	2.2K	5%	1/4W	
R1557	1-249-428-11	CARBON	8.2K	5%	1/4W	

< VARIABLE RESISTOR >

RV1501	1-238-598-11	RES, ADJ, CARBON 2.2K
RV1551	1-238-598-11	RES, ADJ, CARBON 2.2K

< RELAY >

RY141	1-515-920-11	RELAY (24V)
RY142	1-515-920-11	RELAY (24V)
RY143	1-515-920-11	RELAY (24V)

< TERMINAL >

TM131	1-537-240-31	TERMINAL BOARD (SPEAKER)
TM132	1-537-240-31	TERMINAL BOARD (SURROUND SPEAKER)

< VIBRATOR >

X301	1-760-489-11	VIBRATOR, CERAMIC (5MHz)
X302	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)

****

MOTOR | MOTOR (SLIDE) | MOTOR (TURN) | PANEL

Ref. No.	Part No.	Description				Remark
		MOTOR BOARD				
		*************				
		(Included in AUDIO BOARD, COMPLETE)				
		< CAPACITOR >				
C651	1-161-494-00	CERAMIC	0.022uF		25V	
**						
*	1-658-578-11	MOTOR (SLIDE) BOARD				
		********************				
		< CAPACITOR >				
C801	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C804	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C805	1-124-907-11	ELECT	10uF	20%	50V	
		< CONNECTOR >				
* CN801	1-568-947-11	PIN, CONNECTOR 9P				
		< DIODE >				
D801	8-719-010-43	DIODE UZ-5.6BSC				
D804	8-719-987-63	DIODE 1N4148M				
D805	8-719-987-63	DIODE 1N4148M				
		< IC >				
IC801	8-759-274-09	IC BA6286N				
		< RESISTOR >				
R801	1-249-401-11	CARBON	47	5%	1/4W	
		< SWITCH >				
S801	1-762-527-11	SWITCH, ROTARY (OPEN/CLOSE DET)				
**						
*	1-658-577-11	MOTOR (TURN) BOARD				
		*******************				
		< CAPACITOR >				
C701	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C702	1-124-907-11	ELECT	10uF	20%	50V	
C705	1-162-306-11	CERAMIC	0.01uF	20%	16V	
		< CONNECTOR >				
CN703	1-750-413-11	CONNECTOR, FFC/FPC 8P				
CN704	1-506-469-11	PIN, CONNECTOR 4P				
		< DIODE >				
D701	8-719-010-23	DIODE UZ-3.6BSB				
		< IC >				
IC701	8-759-633-65	IC M54641L				
		< RESISTOR >				
R706	1-249-411-11	CARBON	330	5%	1/4W	
R707	1-249-401-11	CARBON	47	5%	1/4W	
**						
*	A-4398-184-A	PANEL BOARD, COMPLETE (GR8: EA3, MY)				
*	A-4392-825-A	PANEL BOARD, COMPLETE (GR8: EA4, TH, SAF)				
*	A-4392-383-A	PANEL BOARD, COMPLETE (GR8: AUS, E, HK, IA, JE, MX, SP, TW)				
*	A-4392-381-A	PANEL BOARD, COMPLETE (RX90: AEP, G, UK, AED)				
*	A-4392-382-A	PANEL BOARD, COMPLETE (RX90: EE, CIS)				
		*********************				
*	4-932-810-11	CUSHION (FL)				
*	4-986-870-01	HOLDER, FL TUBE				
		< CAPACITOR >				
C601	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C602	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C603	1-124-589-11	ELECT	47uF	20%	16V	
C604	1-126-163-11	ELECT	4.7uF	20%	50V	
C605	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C606	1-126-160-11	ELECT	1uF	20%	50V	
C607	1-126-160-11	ELECT	1uF	20%	50V	
C608	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C609	1-162-282-31	CERAMIC	100PF	10%	50V	
C610	1-162-282-31	CERAMIC	100PF	10%	50V	
C611	1-162-282-31	CERAMIC	100PF	10%	50V	
C612	1-162-282-31	CERAMIC	100PF	10%	50V	
C613	1-162-282-31	CERAMIC	100PF	10%	50V	
C614	1-162-282-31	CERAMIC	100PF	10%	50V	
C615	1-162-282-31	CERAMIC	100PF	10%	50V	
C616	1-162-282-31	CERAMIC	100PF	10%	50V	
C617	1-162-282-31	CERAMIC	100PF	10%	50V	
C618	1-162-282-31	CERAMIC	100PF	10%	50V	
C619	1-162-282-31	CERAMIC	100PF	10%	50V	
C620	1-162-282-31	CERAMIC	100PF	10%	50V	
C621	1-162-282-31	CERAMIC	100PF	10%	50V	
C622	1-162-282-31	CERAMIC	100PF	10%	50V	
C623	1-162-282-31	CERAMIC	100PF	10%	50V	
C624	1-162-290-31	CERAMIC	470PF	10%	50V	
C625	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C626	1-124-589-11	ELECT	47uF	20%	16V	
C627	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C628	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C629	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C630	1-162-306-11	CERAMIC	0.01uF	20%	16V	

Ref. No.	Part No.	Description	Remark
C636	1-126-160-11	ELECT 1uF 20% 50V	
C637	1-136-161-00	FILM 0.047uF 5% 50V	
C638	1-124-464-11	ELECT 0.22uF 20% 50V	
C639	1-124-464-11	ELECT 0.22uF 20% 50V	
C640	1-162-306-11	CERAMIC 0.01uF 20% 16V	
C641	1-124-464-11	ELECT 0.22uF 20% 50V	
C642	1-136-159-00	FILM 0.033uF 5% 50V	
C643	1-162-302-11	CERAMIC 0.0022uF 30% 16V	
C644	1-124-464-11	ELECT 0.22uF 20% 50V	
C646	1-162-293-31	CERAMIC 820PF 10% 50V	
C647	1-124-464-11	ELECT 0.22uF 20% 50V	
C648	1-162-306-11	CERAMIC 0.01uF 20% 16V	
C649	1-124-589-11	ELECT 47uF 20% 16V	
C650	1-124-464-11	ELECT 0.22uF 20% 50V	
C653	1-162-282-31	CERAMIC 100PF 10% 50V	
C654	1-164-159-11	CERAMIC 0.1uF 50V	
		< CONNECTOR >	
CN601	1-568-860-11	SOCKET, CONNECTOR 17P	
CN603	1-568-853-11	SOCKET, CONNECTOR 10P	
CN609	1-691-645-11	SOCKET, CONNECTOR 9P	
		< DIODE >	
D601	8-719-058-03	DIODE SEL5423E-TP15 (TUNER/BAND)	
D602	8-719-057-44	DIODE HLMF-K305-2UP (GROOVE)	
D603	8-719-057-40	DIODE HLMF-K305-2VB (SONIC FORMATION)	
D604	8-719-058-04	DIODE SEL5223S-TP15 (EFFECT ON/OFF)	
D605	8-719-058-04	DIODE SEL5223S-TP15 (JOG)	
D606	8-719-057-44	DIODE HLMF-K305-2UP (▷▷▯)	
D607	8-719-057-44	DIODE HLMF-K305-2UP (▯◁◁)	
D608	8-719-057-44	DIODE HLMF-K305-2UP (+)	
D609	8-719-057-44	DIODE HLMF-K305-2UP (–)	
D610	8-719-057-30	DIODE HLMF-K205-2UL (ENTER/NEXT)	
D611	8-719-056-13	DIODE SML79423C-TP15 (AUTO BPM)	
D612	8-719-056-13	DIODE SML79423C-TP15 (AUTO BPM)	
D614	8-719-057-44	DIODE HLMF-K305-2UP (NON STOP)	
D615	8-719-058-04	DIODE SEL5223S-TP15 (BEAT ON/OFF)	
D650	8-719-987-63	DIODE 1N4148M	
D651	8-719-987-63	DIODE 1N4148M	
D652	8-719-987-63	DIODE 1N4148M	
D653	8-719-987-63	DIODE 1N4148M	
D654	8-719-987-63	DIODE 1N4148M	
D655	8-719-987-63	DIODE 1N4148M	
D656	8-719-987-63	DIODE 1N4148M	
		< INDUCTOR >	
FB601	1-412-473-21	INDUCTOR (SMALL TYPE)	
		< FLUORESCENT INDICATOR TUBE >	
FL601	1-517-618-11	INDICATOR TUBE, FLUORESCENT	

Ref. No.	Part No.	Description	Remark
		< IC >	
IC601	8-759-446-27	IC TMP87CH75F-6543	
IC602	8-759-332-18	IC GP1U27XB	
		< INDUCTOR >	
L601	1-410-509-11	INDUCTOR 10uH	
		< TRANSISTOR >	
Q601	8-729-118-00	TRANSISTOR 2SB1116-L	
Q602	8-729-118-00	TRANSISTOR 2SB1116-L	
Q603	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q604	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q605	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q606	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q607	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q608	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q609	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q623	8-729-119-76	TRANSISTOR 2SA1175-HFE	
		< RESISTOR >	
R601	1-247-903-00	CARBON 1M 5% 1/4W	
R602	1-247-807-31	CARBON 100 5% 1/4W	
R603	1-249-429-11	CARBON 10K 5% 1/4W	
R604	1-249-429-11	CARBON 10K 5% 1/4W	
R605	1-249-429-11	CARBON 10K 5% 1/4W	
R606	1-249-429-11	CARBON 10K 5% 1/4W	
R607	1-249-429-11	CARBON 10K 5% 1/4W	
R608	1-247-843-11	CARBON 3.3K 5% 1/4W	
R609	1-247-843-11	CARBON 3.3K 5% 1/4W	
R610	1-247-807-31	CARBON 100 5% 1/4W	
R611	1-247-807-31	CARBON 100 5% 1/4W	
R612	1-249-429-11	CARBON 10K 5% 1/4W	
R613	1-249-415-11	CARBON 680 5% 1/4W	
R614	1-249-431-11	CARBON 15K 5% 1/4W	
R615	1-249-429-11	CARBON 10K 5% 1/4W	
R616	1-249-429-11	CARBON 10K 5% 1/4W	
R617	1-247-804-11	CARBON 75 5% 1/4W	
R618	1-247-804-11	CARBON 75 5% 1/4W	
R619	1-249-401-11	CARBON 47 5% 1/4W	
R620	1-249-419-11	CARBON 1.5K 5% 1/4W	
R621	1-249-419-11	CARBON 1.5K 5% 1/4W	
R622	1-249-401-11	CARBON 47 5% 1/4W	
R623	1-249-403-11	CARBON 68 5% 1/4W	
R624	1-247-807-31	CARBON 100 5% 1/4W	
R625	1-249-407-11	CARBON 150 5% 1/4W	
R626	1-249-407-11	CARBON 150 5% 1/4W	
R627	1-249-409-11	CARBON 220 5% 1/4W	
R628	1-249-411-11	CARBON 330 5% 1/4W	
R629	1-249-413-11	CARBON 470 5% 1/4W	
R630	1-249-415-11	CARBON 680 5% 1/4W	

PANEL

Ref. No.	Part No.	Description	Remark
R631	1-249-417-11	CARBON 1K 5% 1/4W	
R632	1-249-419-11	CARBON 1.5K 5% 1/4W	
R633	1-249-421-11	CARBON 2.2K 5% 1/4W	
R634	1-249-419-11	CARBON 1.5K 5% 1/4W	
R635	1-249-401-11	CARBON 47 5% 1/4W	
R636	1-249-403-11	CARBON 68 5% 1/4W	
R637	1-247-826-00	CARBON 620 5% 1/4W	
R638	1-249-411-11	CARBON 330 5% 1/4W	
R639	1-249-413-11	CARBON 470 5% 1/4W	
R640	1-249-415-11	CARBON 680 5% 1/4W	
R641	1-249-417-11	CARBON 1K 5% 1/4W	
R642	1-249-419-11	CARBON 1.5K 5% 1/4W	
R643	1-249-421-11	CARBON 2.2K 5% 1/4W	
R644	1-247-843-11	CARBON 3.3K 5% 1/4W	
R645	1-249-419-11	CARBON 1.5K 5% 1/4W	
R646	1-249-401-11	CARBON 47 5% 1/4W	
R647	1-249-403-11	CARBON 68 5% 1/4W	
R648	1-247-807-31	CARBON 100 5% 1/4W	
R649	1-249-407-11	CARBON 150 5% 1/4W	
R650	1-249-407-11	CARBON 150 5% 1/4W	
R651	1-249-409-11	CARBON 220 5% 1/4W	
R652	1-249-411-11	CARBON 330 5% 1/4W	
R653	1-249-413-11	CARBON 470 5% 1/4W	
R654	1-249-415-11	CARBON 680 5% 1/4W	
R655	1-249-417-11	CARBON 1K 5% 1/4W	
R656	1-249-419-11	CARBON 1.5K 5% 1/4W	
R657	1-249-421-11	CARBON 2.2K 5% 1/4W	
R658	1-247-843-11	CARBON 3.3K 5% 1/4W	
R659	1-249-427-11	CARBON 6.8K 5% 1/4W	
R660	1-249-431-11	CARBON 15K 5% 1/4W	
R661	1-249-419-11	CARBON 1.5K 5% 1/4W	
R662	1-249-401-11	CARBON 47 5% 1/4W	
R663	1-249-429-11	CARBON 10K 5% 1/4W	
R664	1-249-421-11	CARBON 2.2K 5% 1/4W	
R665	1-247-887-00	CARBON 220K 5% 1/4W	
R666	1-249-421-11	CARBON 2.2K 5% 1/4W	
R667	1-249-409-11	CARBON 220 5% 1/4W	
R668	1-249-409-11	CARBON 220 5% 1/4W	
R669	1-247-807-31	CARBON 100 5% 1/4W	
R670	1-249-406-11	CARBON 120 5% 1/4W	
R671	1-249-409-11	CARBON 220 5% 1/4W	
R672	1-249-409-11	CARBON 220 5% 1/4W	
R673	1-249-409-11	CARBON 220 5% 1/4W	
R674	1-249-409-11	CARBON 220 5% 1/4W	
R675	1-249-409-11	CARBON 220 5% 1/4W	
R676	1-249-409-11	CARBON 220 5% 1/4W	
R677	1-249-409-11	CARBON 220 5% 1/4W	
R678	1-247-804-11	CARBON 75 5% 1/4W	
R679	1-247-804-11	CARBON 75 5% 1/4W	
R680	1-247-807-31	CARBON 100 5% 1/4W	
R681	1-249-409-11	CARBON 220 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R685	1-249-419-11	CARBON 1.5K 5% 1/4W	
R686	1-247-897-11	CARBON 560K 5% 1/4W	
R687	1-249-437-11	CARBON 47K 5% 1/4W	
R688	1-247-895-00	CARBON 470K 5% 1/4W	
R689	1-249-419-11	CARBON 1.5K 5% 1/4W	
R690	1-247-897-11	CARBON 560K 5% 1/4W	
R691	1-249-437-11	CARBON 47K 5% 1/4W	
R692	1-247-895-00	CARBON 470K 5% 1/4W	
R693	1-249-419-11	CARBON 1.5K 5% 1/4W	
R694	1-247-897-11	CARBON 560K 5% 1/4W	
R695	1-249-437-11	CARBON 47K 5% 1/4W	
R696	1-247-895-00	CARBON 470K 5% 1/4W	
R698	1-247-897-11	CARBON 560K 5% 1/4W	
R699	1-249-437-11	CARBON 47K 5% 1/4W	
R700	1-247-895-00	CARBON 470K 5% 1/4W	
R748	1-249-435-11	CARBON 33K 5% 1/4W	
R749	1-247-895-00	CARBON 470K 5% 1/4W	
		< SWITCH >	
S601	1-762-874-11	SWITCH, JOG (JOG)	
S602	1-467-869-11	ENCODER, ROTARY (VOLUME)	
S603	1-554-303-21	SWITCH, TACTILE (TIMER SELECT)	
S604	1-554-303-21	SWITCH, TACTILE (CLOCK TIMER SET)	
S605	1-554-303-21	SWITCH, TACTILE (DISPLAY/DEMO)	
S606	1-554-303-21	SWITCH, TACTILE (SPECTRAM ANALYZER)	
S607	1-554-303-21	SWITCH, TACTILE (DBFB)	
S608	1-554-303-21	SWITCH, TACTILE (SURROUND)	
S609	1-554-303-21	SWITCH, TACTILE (EDIT/DIRECTION)	
S610	1-554-303-21	SWITCH, TACTILE (REPEAT/DOLBY NR)	
S611	1-554-303-21	SWITCH, TACTILE (PLAY MODE)	
S612	1-554-303-21	SWITCH, TACTILE (1/ALL DISCS)	
S613	1-554-303-21	SWITCH, TACTILE (SLEEP)	
S614	1-554-303-21	SWITCH, TACTILE (BEAT ON/OFF)	
S615	1-554-303-21	SWITCH, TACTILE (LOOP)	
S616	1-554-303-21	SWITCH, TACTILE (LOW FREQUENCY)	
S617	1-554-303-21	SWITCH, TACTILE (HIGH FREQUENCY)	
S618	1-554-303-21	SWITCH, TACTILE (ENTER/NEXT)	
S619	1-554-303-21	SWITCH, TACTILE (AUTO BPM)	
S620	1-554-303-21	SWITCH, TACTILE (NON STOP)	
S621	1-554-303-21	SWITCH, TACTILE (WAVE)	
S622	1-554-303-21	SWITCH, TACTILE (LEVEL+)	
S623	1-554-303-21	SWITCH, TACTILE (LEVEL–)	
S624	1-554-303-21	SWITCH, TACTILE (BEAT SELECT)	
S625	1-554-303-21	SWITCH, TACTILE (BEAT SPEED)	
S626	1-554-303-21	SWITCH, TACTILE (FLASH)	
S627	1-554-303-21	SWITCH, TACTILE (PAD A)	
S628	1-554-303-21	SWITCH, TACTILE (SONIC FORMATION)	
S629	1-554-303-21	SWITCH, TACTILE (GROOVE)	
S630	1-554-303-21	SWITCH, TACTILE (MEMORY)	
S631	1-554-303-21	SWITCH, TACTILE (P-FILE)	
S632	1-554-303-21	SWITCH, TACTILE (GAME)	

Ref. No.	Part No.	Description				Remark
S633	1-554-303-21	SWITCH, TACTILE (MOVIE)				
S634	1-554-303-21	SWITCH, TACTILE (MUSIC)				
S635	1-554-303-21	SWITCH, TACTILE (EFFECT ON/OFF)				
S636	1-554-303-21	SWITCH, TACTILE (KARAOKE PON/MPX)				
S637	1-554-303-21	SWITCH, TACTILE (TUNER/BAND)				
S638	1-554-303-21	SWITCH, TACTILE (TUNER MEMORY)				
S639	1-554-303-21	SWITCH, TACTILE (TUNING MODE)				
S640	1-554-303-21	SWITCH, TACTILE (STEREO/MONO)				
S641	1-554-303-21	SWITCH, TACTILE (RDS)				(RX90: AEP, G, UK, AED)
S642	1-554-303-21	SWITCH, TACTILE (FUNCTION)				
S643	1-554-303-21	SWITCH, TACTILE (PAD B)				
S644	1-554-303-21	SWITCH, TACTILE (CHAIN)				
		< VIBRATOR >				
X601	1-579-125-11	VIBRATOR, CERAMIC (8MHz)				

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Ref. No.	Part No.	Description				Remark
*	A-4398-182-A	POWER AMP BOARD, COMPLETE				(GR8: EA3, MY)
*	A-4392-823-A	POWER AMP BOARD, COMPLETE				(GR8: EA4, TH, SAF)
*	A-4392-376-A	POWER AMP BOARD, COMPLETE				(GR8: AUS, E, HK, IA, JE, MX, SP, TW)
*	A-4392-375-A	POWER AMP BOARD, COMPLETE				(RX90: AEP, G, UK, AED, EE, CIS)
		***************************				
		< CAPACITOR >				
C801	1-126-963-11	ELECT	4.7uF	20%	50V	
C802	1-162-286-31	CERAMIC	220PF	10%	50V	
C803	1-162-282-31	CERAMIC	100PF	10%	50V	
C804	1-126-967-11	ELECT	47uF	20%	10V	
C806	1-126-967-11	ELECT	47uF	20%	50V	
C807	1-128-560-11	ELECT	22uF	20%	100V	
C809	1-128-560-11	ELECT	22uF	20%	100V	
C810	1-164-159-11	CERAMIC	0.1uF		50V	
C811	1-130-493-00	MYLAR	0.068uF	5%	50V	
C812	1-130-493-00	MYLAR	0.068uF	5%	50V	
C814	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C841	1-126-925-11	ELECT	470uF	20%	10V	
C851	1-126-963-11	ELECT	4.7uF	20%	50V	
C852	1-162-286-31	CERAMIC	220PF	10%	50V	
C853	1-162-282-31	CERAMIC	100PF	10%	50V	
C854	1-126-967-11	ELECT	47uF	20%	10V	
C856	1-126-967-11	ELECT	47uF	20%	50V	
C857	1-128-560-11	ELECT	22uF	20%	100V	
C861	1-130-493-00	MYLAR	0.068uF	5%	50V	
C862	1-130-493-00	MYLAR	0.068uF	5%	50V	
C901	1-104-482-11	ELECT	4700uF	20%	63V	
C902	1-130-777-00	FILM	0.1uF	10%	100V	
C951	1-104-482-11	ELECT	4700uF	20%	63V	
C952	1-130-777-00	FILM	0.1uF	10%	100V	

Ref. No.	Part No.	Description				Remark
		< CONNECTOR >				
CN801	1-778-981-11	CONNECTOR, BOARD TO BOARD 13P				
		< DIODE >				
D801	8-719-815-85	DIODE 1S1585				
D841	8-719-987-63	DIODE 1N4148M				
D842	8-719-987-63	DIODE 1N4148M				
D851	8-719-815-85	DIODE 1S1585				
D901	8-719-510-68	DIODE D5SBA20F01				
		< IC >				
IC801	8-749-921-04	IC STK-4211MK-2				
		< TRANSISTOR >				
Q801	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA				
Q831	8-729-900-36	TRANSISTOR DTC124ES				
Q832	8-729-119-78	TRANSISTOR 2SC403SP-51				
Q851	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA				
		< RESISTOR >				
R801	1-249-417-11	CARBON	1K	5%	1/4W	
R802	1-249-437-11	CARBON	47K	5%	1/4W	
R803	1-249-413-11	CARBON	470	5%	1/4W	
R804	1-249-437-11	CARBON	47K	5%	1/4W	
R805	1-260-107-11	CARBON	4.7K	5%	1/2W	
R806	1-260-107-11	CARBON	4.7K	5%	1/2W	
⚠R807	1-212-881-11	FUSIBLE	100	5%	1/4W	F
⚠R808	1-217-156-00	WIREWOUND	0.22	10%	5W	F
R809	1-260-076-11	CARBON	10	5%	1/2W	
R811	1-249-417-11	CARBON	1K	5%	1/4W	
R812	1-249-431-11	CARBON	15K	5%	1/4W	
R813	1-249-441-11	CARBON	100K	5%	1/4W	
R814	1-260-103-11	CARBON	2.2K	5%	1/2W	
R816	1-260-103-11	CARBON	2.2K	5%	1/2W	
⚠R820	1-202-972-61	FUSIBLE	1	5%	1/4W	F
R831	1-249-441-11	CARBON	100K	5%	1/4W	
R832	1-249-441-11	CARBON	100K	5%	1/4W	
R833	1-249-441-11	CARBON	100K	5%	1/4W	
R841	1-249-425-11	CARBON	4.7K	5%	1/4W	
R842	1-247-884-11	CARBON	160K	5%	1/4W	
R843	1-249-421-11	CARBON	2.2K	5%	1/4W	
R844	1-249-429-11	CARBON	10K	5%	1/4W	
R851	1-249-417-11	CARBON	1K	5%	1/4W	
R852	1-249-437-11	CARBON	47K	5%	1/4W	
R853	1-249-413-11	CARBON	470	5%	1/4W	
R854	1-249-437-11	CARBON	47K	5%	1/4W	
R855	1-260-107-11	CARBON	4.7K	5%	1/2W	
R856	1-260-107-11	CARBON	4.7K	5%	1/2W	
⚠R857	1-212-881-11	FUSIBLE	100	5%	1/4W	F
⚠R858	1-217-156-00	WIREWOUND	0.22	10%	5W	F
R859	1-260-076-11	CARBON	10	5%	1/2W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
R861	1-249-417-11	CARBON 1K 5% 1/4W	
R862	1-249-431-11	CARBON 15K 5% 1/4W	
R863	1-249-441-11	CARBON 100K 5% 1/4W	
		< THERMISTOR >	
TH801	1-807-796-11	THERMISTOR	

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Ref. No.	Part No.	Description	Remark
*	1-658-576-11	SENSOR BOARD *************	
		< IC >	
IC702	8-749-924-18	IC PHOTO INTERRUPTER RPI-1391	
IC703	8-749-924-30	IC PHOTO REFLECTOR GP2S28	
		< RESISTOR >	
R701	1-249-416-11	CARBON 820 5% 1/4W	
R702	1-249-407-11	CARBON 150 5% 1/4W	

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Ref. No.	Part No.	Description	Remark
*	1-664-024-11	TC SW BOARD ************	
		< CONNECTOR >	
CN607	1-506-486-11	PIN, CONNECTOR 7P	
		< DIODE >	
D634	8-719-063-92	DIODE SLR325MC-M-T31-NP (▷: DECK B)	
D635	8-719-063-92	DIODE SLR325MC-M-T31-NP (◁: DECK B)	
D636	8-719-063-91	DIODE SLR325DC-P-T32 (▮▮ PAUSE)	
D637	8-719-063-93	DIODE SLR325VC-N-T32 (● REC)	
D638	8-719-063-92	DIODE SLR325MC-M-T31-NP (▷: DECK A)	
D639	8-719-063-92	DIODE SLR325MC-M-T31-NP (◁: DECK A)	
		< TRANSISTOR >	
Q617	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q618	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q619	8-729-119-76	TRANSISTOR 2SA1175-HFE	
		< RESISTOR >	
R726	1-249-403-11	CARBON 68 5% 1/4W	
R727	1-247-807-31	CARBON 100 5% 1/4W	
R728	1-249-407-11	CARBON 150 5% 1/4W	
R729	1-249-407-11	CARBON 150 5% 1/4W	
R730	1-249-409-11	CARBON 220 5% 1/4W	
R731	1-249-411-11	CARBON 330 5% 1/4W	
R732	1-249-413-11	CARBON 470 5% 1/4W	
R733	1-249-415-11	CARBON 680 5% 1/4W	
R734	1-249-417-11	CARBON 1K 5% 1/4W	
R735	1-249-419-11	CARBON 1.5K 5% 1/4W	
R736	1-249-421-11	CARBON 2.2K 5% 1/4W	
R737	1-247-843-11	CARBON 3.3K 5% 1/4W	
R738	1-249-427-11	CARBON 6.8K 5% 1/4W	
R739	1-249-431-11	CARBON 15K 5% 1/4W	
R740	1-247-807-31	CARBON 100 5% 1/4W	
R741	1-247-807-31	CARBON 100 5% 1/4W	
R742	1-247-807-31	CARBON 100 5% 1/4W	
R743	1-249-409-11	CARBON 220 5% 1/4W	
R744	1-247-807-31	CARBON 100 5% 1/4W	
R745	1-247-807-31	CARBON 100 5% 1/4W	
		< SWITCH >	
S655	1-554-303-21	SWITCH, TACTILE (▷: DECK B)	
S656	1-554-303-21	SWITCH, TACTILE (◁: DECK B)	
S657	1-554-303-21	SWITCH, TACTILE (▶▶: DECK B)	
S658	1-554-303-21	SWITCH, TACTILE (◀◀: DECK B)	
S659	1-554-303-21	SWITCH, TACTILE (■: DECK B)	
S660	1-554-303-21	SWITCH, TACTILE (▮▮: PAUSE)	
S661	1-554-303-21	SWITCH, TACTILE (●: REC)	
S662	1-554-303-21	SWITCH, TACTILE (CD SYNCHRO)	
S663	1-554-303-21	SWITCH, TACTILE (HIGH SPEED DUBBING)	
S664	1-554-303-21	SWITCH, TACTILE (▶▶: DECK A)	
S665	1-554-303-21	SWITCH, TACTILE (◀◀: DECK A)	
S666	1-554-303-21	SWITCH, TACTILE (■: DECK A)	
S667	1-554-303-21	SWITCH, TACTILE (▷: DECK A)	
S668	1-554-303-21	SWITCH, TACTILE (◁:DECK A)	

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Ref. No.	Part No.	Description	Remark
	A-4303-508-A	TCB BOARD, COMPLETE (GR8: JE)	
	A-4303-571-A	TCB BOARD, COMPLETE (RX90: AEP, G, UK, AED)	
	A-4303-570-A	TCB BOARD, COMPLETE (RX90: EE, CIS) ********************	
		< CAPACITOR >	
C1	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	(GR8: JE/RX90)
C2	1-126-967-11	ELECT 47uF 20% 16V	(GR8: JE/RX90)
C3	1-163-038-91	CERAMIC (2012) 100000PF 25V	(GR8: JE/RX90)
C5	1-163-031-11	CERAMIC (2012) 10000PF 50V	(GR8: JE/RX90)
C6	1-163-038-91	CERAMIC (2012) 100000PF 25V	(GR8: JE/RX90)
C7	1-101-004-00	CERAMIC 0.01uF 50V	(GE8: JE/RX90: EE, CIS)
C8	1-163-031-11	CERAMIC (2012) 10000PF 50V	(GR8: JE/RX90)
C9	1-163-031-11	CERAMIC (2012) 10000PF 50V	(GR8: JE/RX90)
C10	1-163-031-11	CERAMIC (2012) 10000PF 50V	(GR8: JE/RX90)
C11	1-163-038-91	CERAMIC (2012) 100000PF 25V	(GR8: JE)

Ref. No.	Part No.	Description	Remark
C14	1-163-038-91	CERAMIC (2012) 100000PF 25V	(GR8: JE)
C15	1-163-162-00	FILM 0.056uF 5% 50V	(GR8: JE)
C16	1-163-038-91	CERAMIC (2012) 100000PF 25V	(GR8: JE/RX90)
C17	1-163-031-11	CERAMIC (2012) 10000PF 50V	(GR8: JE)
C18	1-163-088-11	CERAMIC CHIP (2012) 5PF 50V	(GR8: JE)
C19	1-163-249-11	CHIP CERAMIC (2012) 82PF	(RX90)
C21	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	(GR8: JE/RX90)
C22	1-163-031-11	CERAMIC (2012) 10000PF 50V	(GR8: JE/RX90)
C23	1-163-235-11	CHIP CERAMIC (2012) 22PF 5% 50V	(GR8: JE/RX90)
C24	1-163-239-11	CHIP CERAMIC (2012) 33PF 5% 50V	(GR8: JE/RX90)
C26	1-126-967-11	ELECT 47uF 20% 16V	(GR8: JE/RX90)
C28	1-126-967-11	ELECT 47uF 20% 16V	(GR8: JE/RX90)
C29	1-162-306-11	CERAMIC 0.01uF 20% 16V	(GR8: JE/RX90)
C30	1-126-961-11	ELECT 2.2uF 20% 50V	(GR8: JE/RX90)
C31	1-163-031-11	CERAMIC (2012) 10000PF 50V	(GR8: JE/RX90)
C32	1-163-038-91	CERAMIC (2012) 100000PF 25V	(GR8: JE/RX90)
C33	1-163-038-91	CERAMIC (2012) 100000PF 25V	(GR8: JE/RX90)
C34	1-163-229-11	CHIP CERAMIC (2012) 12PF 5% 50V	(RX90)
C34	1-163-229-11	CHIP CERAMIC (2012) 8PF 50V	(GR8: JE)
C35	1-163-038-91	CERAMIC (2012) 100000PF 25V	(GR8: JE/RX90)
C36	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	(GR8: JE/RX90)
C37	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	(GR8: JE/RX90)
C38	1-162-211-31	CERAMIC (2012) 33PF 5% 50V	(GR8: JE)
C39	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	(GR8: JE/RX90)
C40	1-163-031-11	CERAMIC (2012) 10000PF 50V	(GR8: JE/RX90)
C41	1-163-031-11	CERAMIC (2012) 10000PF 50V	(GR8: JE/RX90)
C42	1-163-038-91	CERAMIC (2012) 100000PF 25V	(GR8: JE/RX90)
C43	1-163-038-91	CERAMIC (2012) 100000PF 25V	(GR8: JE/RX90)
C44	1-163-031-11	CERAMIC (2012) 10000PF 50V	(GR8: JE/RX90)
C45	1-163-038-91	CERAMIC (2012) 100000PF 25V	(GR8: JE/RX90)
C46	1-163-077-00	CERAMIC CHIP 0.1uF 10% 25V	(GR8: JE/RX90)
C47	1-126-967-11	ELECT 47uF 20% 16V	(GR8: JE/RX90)
C48	1-163-031-11	CERAMIC (2012) 10000PF 50V	(GR8: JE/RX90)
C49	1-126-959-11	ELECT 0.47uF 20% 50V	(GR8: JE/RX90)
C50	1-126-960-11	ELECT 1uF 20% 50V	(GR8: JE/RX90)
C51	1-126-960-11	ELECT 1uF 20% 50V	(GR8: JE/RX90)
C52	1-126-963-11	ELECT 4.7uF 20% 50V	(RX90)
C52	1-126-964-11	ELECT 10uF 20% 50v	(GR8: JE)
C53	1-126-964-11	ELECT 10uF 20% 50v	(GR8: JE/RX90)
C54	1-104-396-11	ELECT 10uF 20% 16V	(GR8: JE/RX90)
C55	1-104-396-11	ELECT 10uF 20% 16V	(GR8: JE/RX90)
C56	1-104-396-11	ELECT 10uF 20% 16V	(GR8: JE/RX90)
C57	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V	(GR8: JE/RX90)
C58	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V	(GR8: JE/RX90)
C59	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	(GR8: JE/RX90)
C60	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	(GR8: JE/RX90)
C61	1-126-301-11	ELECT 1uF 20% 50V	(GR8: JE/RX90)
C62	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	(GR8: JE/RX90)
C63	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V	(GR8: JE/RX90)
C64	1-126-967-11	ELECT 47uF 20% 16V	(GR8: JE/RX90)
C65	1-163-031-11	CERAMIC (2012) 10000PF 50V	(GR8: JE/RX90)
C66	1-126-162-11	ELECT 3.3uF 20% 50V	(GR8: JE/RX90)
C67	1-126-933-11	ELECT 100uF 20% 10V	(GR8: JE/RX90)
C68	1-162-306-11	CERAMIC 0.01uF 20% 16V	(GR8: JE/RX90)
C71	1-162-306-11	CERAMIC 0.01uF 20% 16V	(GR8: JE/RX90)

TCB

Ref. No.	Part No.	Description	Remark
C72	1-126-967-11	ELECT 47uF 20% 16V	(GR8: JE/RX90)
C120	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	(RX90: AEP, G, UK AED)
C1701	1-162-294-31	CERAMIC 0.001uF 10% 50V	(RX90: EE, CIS)
C1702	1-130-014-00	PP FILM 470PF 5% 16V	(RX90: EE, CIS)
C1703	1-126-959-11	ELECT 0.47uF 20% 50V	(RX90: EE, CIS)
C1704	1-126-959-11	ELECT 0.47uF 20% 50V	(RX90: EE, CIS)
C1705	1-163-035-00	CERAMIC CHIP 0.047uF 50V	(RX90: EE, CIS)
C1706	1-126-960-11	ELECT 1uF 20% 50V	(RX90: EE, CIS)
C1707	1-163-129-00	CERAMIC CHIP 330P 5% 50V	(RX90: EE, CIS)
C1710	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	(RX90: EE, CIS)
C1711	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	(RX90: EE, CIS)
C1712	1-130-736-11	PP FILM 0.01uF 5% 16V	(RX90: EE, CIS)
C1713	1-130-736-11	PP FILM 0.01uF 5% 16V	(RX90: EE, CIS)
C1714	1-126-960-11	ELECT 1uF 20% 50V	(RX90: EE, CIS)
C1715	1-126-960-11	ELECT 1uF 20% 50V	(RX90: EE, CIS)
C1716	1-126-960-11	ELECT 1uF 20% 50V	(RX90: EE, CIS)
C1719	1-126-967-11	ELECT 47uF 20% 16V	(RX90: EE, CIS)
C1720	1-163-031-11	CERAMIC CHIP 0.01uF 50V	(RX90: EE, CIS)
C1723	1-163-031-11	CERAMIC CHIP 0.01uF 50V	(RX90: EE, CIS)
C1724	1-163-031-11	CERAMIC CHIP 0.01uF 50V	(RX90: EE, CIS)
C1725	1-126-967-11	ELECT 47uF 20% 16V	(RX90: EE, CIS)
C1726	1-126-960-11	ELECT 1uF 20% 50V	(RX90: EE, CIS)
C1727	1-126-960-11	ELECT 1uF 20% 50V	(RX90: EE, CIS)
C1728	1-126-966-11	ELECT 33uF 20% 16V	(RX90: EE, CIS)
C1751	1-164-159-21	CERAMIC 0.01uF 50V	(RX90: AEP, G, UK, AED)
C1752	1-126-967-11	ELECT 47uF 20% 16V	(RX90: AEP, G, UK, AED)
C1753	1-262-964-11	ELECT 10uF 20% 50V	(RX90: AEP, G, UK, AED)
C1754	1-162-291-31	CERAMIC 560PF 10% 50V	(RX90: AEP, G, UK, AED)
C1755	1-126-964-11	ELECT 10uF 20% 50V	(RX90: AEP, G, UK, AED)
C1756	1-126-961-11	ELECT 2.2uF 20% 50V	(RX90: AEP, G, UK, AED)
C1757	1-162-288-31	CERAMIC 330PF 10% 50V	(RX90: AEP, G, UK, AED)
C1758	1-163-031-11	CERAMIC (2012) 10000PF 50V	(RX90: AEP, G, UK, AED)
C1759	1-163-135-00	CERAMIC CHIP 560PF 5% 50V	(RX90: AEP, G, UK, AED)
C1760	1-163-031-11	CERAMIC (2012) 10000PF 50V	(RX90: AEP, G, UK, AED)
C1761	1-163-243-11	CERAMIC CHIP 47PF 5% 50V	(RX90: AEP, G, UK, AED)
C1762	1-163-249-11	CERAMIC CHIP 82PF 5% 50V	(RX90: AEP, G, UK, AED)

< CERAMIC FILTER >

Ref. No.	Part No.	Description	Remark
CF1	1-567-389-11	FILTER, CERAMIC	(GR8: JE/RX90: EE, CIS)
CF1	1-579-374-11	FILTER, CERAMIC	(RX90: AEP, G, UK, AED)
CF2	1-760-393-11	FILTER, CERAMIC	(RX90: AEP, G, UK, AED)
CF3	1-567-389-11	FILTER, CERAMIC	(GR8: JE/RX90: EE, CIS)
CF3	1-760-393-11	FILTER, CERAMIC	(RX90: AEP, G, UK, AED)

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
* CN1	1-568-834-11	SOCKET, CONNECTOR 15P	(GR8: JE/RX90)

< TRIMMER >

Ref. No.	Part No.	Description	Remark
CT1701	1-141-444-11	CAP, CERAMIC TRIMMER 50PF	(RX90: EE, CIS)
CV1	1-141-227-00	CAP, TRIMMER 20PF	(GR8: JE)
CV2	1-141-227-00	CAP, TRIMMER 20PF	(GR8: JE)

< DIODE >

Ref. No.	Part No.	Description	Remark
D1	8-719-976-30	DIODE KV1560NT	(GR8: JE)
D21	8-719-976-99	DIODE UDZ-TE-17-5.1B	(GR8: JE/RX90)
D41	8-719-016-74	DIODE 1SS352-TPH3	(GR8: JE/RX90)
D42	8-719-987-63	DIODE 1N4148M-TA	(RX90: AEP, G, UK, AED)
D42	8-719-016-74	DIODE 1SS352-TPH3	(RX90: EE, CIS)
D43	8-719-016-74	DIODE 1SS352-TPH3	(RX90: EE, CIS)
D1701	8-719-016-74	DIODE 1SS352-TPH3	(RX90: EE, CIS)
D1702	8-719-016-74	DIODE 1SS352-TPH3	(RX90: EE, CIS)
D1703	8-719-987-63	DIODE 1N4148M-TA	(RX90: EE, CIS)
D1704	8-719-016-74	DIODE 1SS352-TPH3	(RX90: EE, CIS)
D1751	8-719-016-74	DIODE 1SS352-TPH3	(RX90: AEP, G, UK, AED)

< TUNER UNIT >

Ref. No.	Part No.	Description	Remark
FE1	1-693-251-11	FRONT END	(GR8: JE)
FE1	1-693-357-11	FRONT END (4 GANG)	(RX90: AEP, G, UK, AED)
FE1	1-693-335-11	FRONT END (3 GANG)	(RX90: EE, CIS)
FE2	1-233-262-11	ENCAPSULATED COMPONENT	(GR8: JE)
FE2	1-233-514-11	ENCAPSULATED COMPONENT	(RX90)

Ref. No.	Part No.	Description	Remark
		< IC >	
IC21	8-759-288-54	IC LC72130 (GR8: JE/RX90)	
IC41	8-759-176-03	IC LA1835 (GR8: JE/RX90)	
IC1701	8-759-063-04	IC IR3R42 (RX90: EE, CIS)	
IC1702	8-759-140-53	IC MC14053BCP (RX90: EE, CIS)	
IC1751	8-759-963-51	IC NJM4558D (RX90: AEP, G, UK, AED)	
IC1752	8-759-450-86	IC BU1922 (RX90: AEP, G, UK, AED)	
		< IFT >	
IFT41	1-409-636-11	TRANSFORMER, IF (CERAMIC FILTER)	(GR8: JE/RX90)
		< CHIP CONDUCTOR >	
JR2	1-216-295-91	CONDUCTOR, CHIP (2012) (RX90)	
JR6	1-216-295-91	CONDUCTOR, CHIP (2012) (RX90)	
JR8	1-216-295-91	CONDUCTOR, CHIP (2012) (RX90)	
JR9	1-216-295-91	CONDUCTOR, CHIP (2012) (RX90)	
JR45	1-216-295-91	CONDUCTOR, CHIP (2012) (GR8: JE)	
JR46	1-216-296-91	CONDUCTOR, CHIP (3216) (GR8: JE/RX90)	
JR47	1-216-295-91	CONDUCTOR, CHIP (2012) (GR8: JE/RX90)	
JR48	1-216-295-91	CONDUCTOR, CHIP (2012) (GR8: JE/RX90)	
JR49	1-216-296-91	CONDUCTOR, CHIP (3216) (GR8: JE/RX90)	
JR50	1-216-295-91	CONDUCTOR, CHIP (2012) (GR8: JE)	
JR51	1-216-295-91	CONDUCTOR, CHIP (2012) (GR8: JE/RX90)	
JR52	1-216-295-91	CONDUCTOR, CHIP (2012) (GR8: JE/RX90)	
JR53	1-216-296-91	CONDUCTOR, CHIP (3216) (GR8: JE/RX90)	
JR54	1-216-295-91	CONDUCTOR, CHIP (2012) (GR8: JE/RX90)	
JR1701	1-216-295-91	CONDUCTOR, CHIP (2012) (RX90: EE, CIS)	
JR1702	1-216-295-91	CONDUCTOR, CHIP (2012) (RX90: EE, CIS)	
JR1703	1-216-295-91	CONDUCTOR, CHIP (2012) (RX90: EE, CIS)	
JR1704	1-216-295-91	CONDUCTOR, CHIP (2012) (RX90: EE, CIS)	
JR1705	1-216-295-91	CONDUCTOR, CHIP (2012) (RX90: EE, CIS)	
		< INDUCTOR >	
L1	1-410-521-11	INDUCTOR, MICRO 100uH (GR8: JE)	
L2	1-414-142-11	INDUCTOR, MICRO 10uH	(RX90: AEP, G, UK, AED)
L3	1-410-521-11	INDUCTOR, MICRO 100uH (GR8: JE/RX90)	
L4	1-410-515-11	INDUCTOR, MICRO 33uH	(RX90: AEP, G, UK, AED)
L41	1-410-119-11	MICRO INDUCTOR 1mH (GR8: JE)	
L41	1-407-500-00	MICRO INDUCTOR 4.7mH (RX90)	
L1701	1-409-497-11	COIL 5.19mH (FILTER)	(RX90: EE, CIS)
L1751	1-410-521-11	INDUCTOR, MICRO 100uH	(RX90: AEP, G, UK, AED)
		< LOW-PASS FILTER >	
LPF41	1-239-845-11	FILTER, LOW-PASS	
LPF42	1-239-845-11	FILTER, LOW-PASS	

Ref. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q1	8-729-201-27	TRANSISTOR 2SC2715Y-TE85L (GR8: JE/RX90)	
Q2	8-729-201-27	TRANSISTOR 2SC2715Y-TE85L (GR8: JE/RX90)	
Q3	8-729-201-27	TRANSISTOR 2SC2715Y-TE85L (GR8: JE/RX90)	
Q4	8-729-201-27	TRANSISTOR 2SC2715Y-TE85L (GR8: JE/RX90)	
Q5	8-729-424-08	TRANSISTOR MUN2111T1 (GR8: JE/RX90)	
Q8	8-729-033-67	TRANSISTOR 2SK211-Y-TE85L (GR8: JE)	
Q9	8-729-216-22	TRANSISTOR 2SA812-T1-M5M6	(GR8: JE/RX90)
Q10	8-729-216-22	TRANSISTOR 2SA812-T1-M5M6 (GR8: JE)	
Q11	8-729-421-22	TRANSISTOR MUN2211T1 (RX90)	
Q12	8-729-421-22	TRANSISTOR MUN2211T1 (GR8: JE/RX90)	
Q13	8-729-421-22	TRANSISTOR MUN2211T1 (GR8: JE/RX90)	
Q14	8-729-421-22	TRANSISTOR MUN2211T1 (GR8: JE/RX90)	
Q1701	8-729-424-08	TRANSISTOR MUN2111T1 (RX90: EE, CIS)	
Q1702	8-729-907-00	TRANSISTOR RT1N141M-TP-1 (RX90: EE, CIS)	
Q1703	8-729-421-22	TRANSISTOR MUN2211T1 (RX90: EE, CIS)	
		< RESISTOR >	
R1	1-249-401-11	CARBON 47 5% 1/4W	(GR8: JE/RX90)
R2	1-216-037-00	METAL CHIP 330 5% 1/10W	(GR8: JE/RX90)
R3	1-216-037-00	METAL CHIP 330 5% 1/10W	(GR8: JE/RX90)
R5	1-216-037-00	METAL CHIP 330 5% 1/10W	(GR8: JE/RX90)
R6	1-216-081-00	METAL CHIP 22K 5% 1/10W	(GR8: JE/RX90)
R7	1-216-037-00	METAL CHIP 330 5% 1/10W	(GR8: JE/RX90)
R8	1-216-037-00	METAL CHIP 330 5% 1/10W	(GR8: JE/RX90)
R9	1-216-081-00	METAL CHIP 22K 5% 1/10W	(GR8: JE/RX90)
R10	1-216-037-00	METAL CHIP 330 5% 1/10W	(GR8: JE/RX90)
R11	1-216-081-00	METAL CHIP 22K 5% 1/10W	(GR8: JE/RX90)
R12	1-216-037-00	METAL CHIP 330 5% 1/10W	(GR8: JE/RX90)
R13	1-216-037-00	METAL CHIP 330 5% 1/10W	(GR8: JE/RX90)
R14	1-216-081-00	METAL CHIP 22K 5% 1/10W	(GR8: JE/RX90)
R18	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	(GR8: JE)
R18	1-216-073-00	METAL CHIP 10K 5% 1/10W	(RX90)
R19	1-216-073-00	METAL CHIP 10K 5% 1/10W	(GR8: JE/RX90)
R21	1-216-049-00	METAL CHIP 1K 5% 1/10W	(GR8: JE/RX90: AEP, G, UK, AED)

TCB

Ref. No.	Part No.	Description				Remark
R21	1-249-417-11	CARBON	1K	5%	1/4W	(RX90: EE, CIS)
R22	1-216-049-00	METAL CHIP	1K	5%	1/10W	(GR8: JE/RX90: AEP, G, UK, AED)
R22	1-249-417-11	CARBON	1K	5%	1/4W	(RX90: EE, CIS)
R23	1-216-049-00	METAL CHIP	1K	5%	1/10W	(GR8: JE/RX90: AEP, G, UK, AED)
R23	1-249-417-11	CARBON	1K	5%	1/4W	(RX90: EE, CIS)
R24	1-216-025-91	CHIP (2012)	100	5%	1/10W	(GR8: JE/RX90)
R25	1-249-417-11	CARBON	1K	5%	1/4W	(GR8: JE/RX90)
R26	1-249-437-11	CARBON	47K	5%	1/4W	(GR8: JE/RX90)
R27	1-249-429-11	CARBON	10K	5%	1/4W	(GR8: JE/RX90)
R28	1-249-417-11	CARBON	1K	5%	1/4W	(GR8: JE/RX90)
R29	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	(GR8: JE/RX90)
R30	1-216-186-00	CHIP (3216)	330	5%	1/8W	(GR8: JE/RX90)
R31	1-216-025-91	CHIP (2012)	100	5%	1/10W	(GR8: JE/RX90)
R32	1-249-425-11	CARBON	4.7K	5%	1/4W	(GR8: JE/RX90)
R33	1-249-425-11	CARBON	4.7K	5%	1/4W	(GR8: JE/RX90)
R34	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	(GR8: JE/RX90)
R35	1-216-214-00	CHIP (3216)	4.7K	5%	1/8W	(GR8: JE/RX90)
R36	1-216-025-91	CHIP (2012)	100	5%	1/10W	(GR8: JE/RX90)
R37	1-216-073-00	METAL CHIP	10K	5%	1/10W	(GR8: JE/RX90)
R38	1-216-089-91	CHIP (2012)	47K	5%	1/10W	(GR8: JE/RX90)
R39	1-249-429-11	CARBON	10K	5%	1/4W	(GR8: JE/RX90)
R42	1-216-073-00	METAL CHIP	10K	5%	1/10W	(GR8: JE/RX90)
R43	1-216-042-00	METAL CHIP	510	5%	1/10W	(GR8: JE/RX90)
R44	1-216-021-00	METAL CHIP	68	5%	1/10W	(GR8: JE)
R44	1-216-013-00	METAL CHIP	33	5%	1/10W	(RX90)
R45	1-247-843-11	CARBON (SMALL)	3.3K	5%	1/4W	(GR8: JE/RX90)
R46	1-216-073-00	METAL CHIP	10K	5%	1/10W	(GR8: JE/RX90)
R47	1-216-097-91	CHIP (2012)	100K	5%	1/10W	(GR8: JE/RX90)
R48	1-247-843-11	CARBON	3.3K	5%	1/4W	(GR8: JE)
R48	1-249-417-11	CARBON	1K	5%	1/4W	(RX90)
R49	1-216-061-00	CHIP (2012)	3.3K	5%	1/10W	(GR8: JE)
R49	1-216-049-91	CHIP (2012)	1.0K	5%	1/10W	(RX90)
R50	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	(GR8: JE/RX90)
R51	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	(GR8: JE/RX90)
R53	1-249-429-11	CARBON	10K	5%	1/4W	(GR8: JE/RX90)
R54	1-249-399-11	CARBON	33K	5%	1/4W	(GR8: JE/RX90: AEP, G, UK, AED)
R55	1-216-162-00	CHIP (3216)	33	5%	1/8W	(GR8: JE/RX90)
R56	1-249-393-11	CARBON	10	5%	1/4W	(GR8: JE/RX90)
R91	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	(GR8: JE)
R91	1-216-295-91	CONDUCTOR, CHIP (2012)				(RX90)
R92	1-216-073-00	METAL CHIP	10K	5%	1/10W	(GR8: JE/RX90)
R93	1-216-073-00	METAL CHIP	10K	5%	1/10W	(GR8: JE)
R94	1-216-073-00	METAL CHIP	10K	5%	1/10W	(GR8: JE/RX90: AEP, G, UK, AED)
R99	1-249-399-11	CARBON	33	5%	1/4W	(RX90)
R1701	1-216-081-00	METAL CHIP	22K	5%	1/10W	(RX90: EE, CIS)
R1702	1-216-085-00	METAL CHIP	33K	5%	1/10W	(RX90: EE, CIS)
R1703	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	(RX90: EE, CIS)
R1704	1-216-075-00	METAL CHIP	12K	5%	1/10W	(RX90: EE, CIS)
R1705	1-216-049-91	METAL CHIP	1K	5%	1/10W	(RX90: EE, CIS)
R1706	1-216-049-91	METAL CHIP	1K	5%	1/10W	(RX90: EE, CIS)
R1707	1-216-097-91	METAL CHIP	100K	5%	1/10W	(RX90: EE, CIS)
R1708	1-216-095-00	METAL CHIP	82K	5%	1/10W	(RX90: EE, CIS)
R1709	1-216-089-91	METAL CHIP	47K	5%	1/10W	(RX90: EE, CIS)
R1710	1-216-073-00	METAL CHIP	10K	5%	1/10W	(RX90: EE, CIS)
R1711	1-249-429-11	CARBON	10K	5%	1/4W	(RX90: EE, CIS)
R1714	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	(RX90: EE, CIS)

Ref. No.	Part No.	Description	Remark
R1715	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	(RX90: EE, CIS)
R1716	1-216-097-91	METAL CHIP 100K 5% 1/10W	(RX90: EE, CIS)
R1717	1-216-097-91	METAL CHIP 100K 5% 1/10W	(RX90: EE, CIS)
R1718	1-249-429-11	CARBON 10K 5% 1/4W	(RX90: EE, CIS)
R1719	1-216-097-91	METAL CHIP 100K 5% 1/10W	(RX90: EE, CIS)
R1720	1-249-434-11	CARBON 27K 5% 1/4W	(RX90: EE, CIS)
R1721	1-216-073-00	METAL CHIP 10K 5% 1/10W	(RX90: EE, CIS)
R1751	1-247-807-31	CARBON 100K 5% 1/4W	(RX90: AEP, G, UK, AED)
R1752	1-216-073-00	METAL CHIP 10K 5% 1/10W	(RX90: AEP, G, UK, AED)
R1753	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	(RX90: AEP, G, UK, AED)
R1754	1-216-097-91	METAL CHIP 100K 5% 1/10W	(RX90: AEP, G, UK, AED)
R1755	1-216-097-91	METAL CHIP 100K 5% 1/10W	(RX90: AEP, G, UK, AED)
R1756	1-249-401-11	CARBON 47 5% 1/4W	(RX90: AEP, G, UK, AED)
R1757	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(RX90: AEP, G, UK, AED)

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV41	1-238-601-11	ADJ, CARBON 22K (GR8: JE/RX90)	
RV42	1-238-600-11	ADJ, CARBON 10K (GR8: JE/RX90)	
RV1701	1-238-600-11	ADJ, CARBON 10K (RX90: EE, CIS)	
RV1702	1-238-599-11	ADJ, CARBON 4.7K (RX90: EE, CIS)	

< COIL >

Ref. No.	Part No.	Description	Remark
T1	1-409-505-11	COIL (ANT. SW3) (GR8: JE)	
T2	1-402-960-11	COIL (OSC. SW3) (GR8: JE)	

< TERMINAL >

Ref. No.	Part No.	Description	Remark
TM1	1-537-238-21	TERMINAL BOARD (ANT) (ANTENNA) (GR8: JE)	
TM1	1-537-488-11	TERMINAL BOARD (ANT) (ANTENNA) (RX90)	

< VIBRATOR >

Ref. No.	Part No.	Description	Remark
X21	1-760-549-11	VIBRATOR, CRYSTAL (4.5MHz) (GR8: JE/RX90)	
X41	1-760-220-11	FILTER, CERAMIC (10.7MHz) (GR8: JE/RX90)	
X42	1-527-981-00	FILTER, CERAMIC (450kHz) (GR8: JE/RX90)	
X43	1-577-075-11	OSCILLATOR, CERAMIC (456kHz)	(GR8: JE/RX90)
X1751	1-579-900-21	VIBRATOR, CRYSTAL (4.332MHz)	(RX90: AEP, G, UK, AED)

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Ref. No.	Part No.	Description	Remark
*	1-664-026-11	TRANS BOARD ************	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
* CN901	1-564-522-11	PLUG, CONNECTOR 7P	
* CN902	1-564-518-11	PLUG, CONNECTOR 3P	
CN903	1-564-321-00	PIN, CONNECTOR 2P	

< FUSE >

Ref. No.	Part No.	Description	Remark
⚠F901	1-532-203-00	FUSE, TIME-LAG (2A, 250V)	(EXCEPT GR8: MX)
⚠F902	1-532-350-00	FUSE, TIME-LAG (4A, 250V)	(GR8: EA3, E, HK, IA, JE, MX, SP, TW)

< FUSE HOLDER >

Ref. No.	Part No.	Description	Remark
FH901	1-533-223-11	HOLDER, FUSE	(EXCEPT GR8: MX)
FH902	1-533-223-11	HOLDER, FUSE	(GR8: EA3, E, HK, IA, JE, MX, SP, TW)
FH951	1-533-223-11	HOLDER, FUSE	(EXCEPT GR8: MX)
FH952	1-533-223-11	HOLDER, FUSE	(GR8: EA3, E, HK, IA, JE, MX, SP, TW)

< RESISTOR >

Ref. No.	Part No.	Description	Remark
⚠R901	1-219-120-11	FUSIBLE 0.15 5% 1/4W	F
⚠R902	1-219-120-11	FUSIBLE 0.15 5% 1/4W	F
⚠R903	1-219-120-11	FUSIBLE 0.15 5% 1/4W	F
⚠R904	1-219-120-11	FUSIBLE 0.15 5% 1/4W	F

< SWITCH >

Ref. No.	Part No.	Description	Remark
⚠S901	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR)	(GR8: EA3, E, HK, IA, JE, SP, TW)

< TRANSFORMER >

Ref. No.	Part No.	Description	Remark
⚠T901	1-429-994-11	TRANSFORMER, POWER	(RX90: AEP, AED, EE, CIS, G, UK)
⚠T901	1-429-995-11	TRANSFORMER, POWER	(GR8: E, EA4, HK, IA, MX, SAF, SP, TH, TW, AUS, JE)
⚠T901	1-429-995-21	TRANSFORMER, POWER	(GR8: EA3, MY)

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The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS **************	
14	1-773-160-11	WIRE (FLAT TYPE) (21 CORE)	
15	1-769-947-11	WIRE (FLAT TYPE) (11 CORE)	
64	1-777-869-11	WIRE (FLAT TYPE) (10 CORE)	
65	1-777-936-11	WIRE (FLAT TYPE) (5 CORE)	
66	1-773-051-11	WIRE (FLAT TYPE) (17 CORE)	
74	1-769-909-11	WIRE (FLAT TYPE) (9 CORE)	
104	1-777-870-11	WIRE (FLAT TYPE) (19 CORE)	
106	1-233-545-11	ENCAPSULATED COMPONENT (GR8:E2, EA4, MX, TH, AUS)	
106	1-233-546-11	ENCAPSULATED COMPONENT (GR8:E3, EA3, HK, IA, MY, SAF, SP, TW)	
108	1-751-086-11	WIRE (FLAT TYPE) (13 CORE) (GR8:E2, EA4, MX, TH, AUS)	
108	1-773-012-11	WIRE (FLAT TYPE) (15 CORE) (GR8: E3, EA3, HK, IA, MY, SAF, SP, TW, JE,/ RX90)	
⚠113	1-751-326-31	CORD, POWER (TH)	
⚠115	1-777-462-11	CORD, POWER (E, IA, MX, JE)	
⚠116	1-569-007-11	ADAPTOR, CONVERSION 2P (E3, IA, JE)	
⚠117	1-569-008-11	ADAPTOR, CONVERSION 2P (EA3, SP, TW)	
⚠118	1-575-651-11	CORD, POWER (AEP, AED, EE, CIS, G, EA3, EA4, HK, MY, SAF, SP, TW)	
⚠119	1-690-608-11	CORD, POWER (AUS)	
⚠120	1-696-570-21	CORD, POWER (UK)	
⚠121	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)	
257	1-452-538-11	MAGNET	
258	1-776-042-11	WIRE (FLAT TYPE) (8 CORE)	
⚠301	8-820-020-01	OPTICAL PICK-UP KSS-213D/ Q-NP	
302	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
HP101	1-500-093-11	HEAD, MAGNETIC (PLAYBACK) (DECK A)	
HRPE101	1-500-094-11	HEAD, MAGNETIC (REC/ PB/ ERASE) (DECK B)	
M1	X-3371-223-1	MOTOR ASSY CAPSTAN	
M2	A-2004-410-A	MOTOR ASSY, DC (TRIGGER)	
M101	X-4917-523-4	MOTOR ASSY SPINDLE	
M102	X-4917-504-1	MOTOR ASSY SLED	
M701	A-4672-004-A	MOTOR ASSY (TURN)	
M801	A-4672-004-A	MOTOR ASSY (SLED)	
M901	1-698-792-11	FAN, DC	
S811	1-473-335-11	ENCODER, ROTARY (BU, TRAY ADDRESS DET)	
⚠T901	1-429-994-11	TRANSFORMER, POWER (RX90: AEP, AED, EE, CIS, G, UK)	
⚠T901	1-429-995-11	TRANSFORMER, POWER (GR8: E, EA4, HK, IA, MX, SAF, SP, TH, TW, AUS, JE)	
⚠T901	1-429-995-21	TRANSFORMER, POWER (GR8: EA3, MY)	

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Ref. No.	Part No.	Description	Remark
		************** HARDWARE LIST **************	
#1	7-685-871-01	SCREW +BVTT 3X6 (S)	
#2	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#3	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
#4	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#5	7-621-775-10	SCREW +B 2.6X4	
#6	7-621-255-15	SCREW +P 2X3	
#7	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S	
#8	7-685-131-19	SCREW +BTP 2.6X4 TYPE2 N-S	
#9	7-685-862-09	SCREW +BVTT 2.6X6 (S)	
#10	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#11	7-623-921-01	RING, RETAINING, CAPSTAN	
#12	7-621-775-00	SCREW +B 2.6X3	
#13	7-685-872-09	SCREW +BVTT 3X8 (S)	

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Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS ***********************************	
	1-501-374-11	ANTENNA, LOOP (GR8: IA, SAF, JE)	
	1-501-659-11	ANTENNA (FM) (GR8: SAF)	
	1-501-659-41	ANTENNA (FM) (GR8: IA, JE)	
	3-859-545-11	MANUAL, INSTRUCTION (ENGLISH) (GR8: IA, JE)	
	3-859-545-31	MANUAL, INSTRUCTION (CHINESE) (GR8: IA, JE)	
	3-859-545-41	MANUAL, INSTRUCTION (KOREAN, PORTUGUESE) (GR8: JE)	
	4-979-371-01	COVER, BATTERY (for RM-SD80)	
	8-917-582-90	REMOCON, SONY RM-SD80//M SET (GR8: IA, SAF, JE)	

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Home A&V Products Company

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